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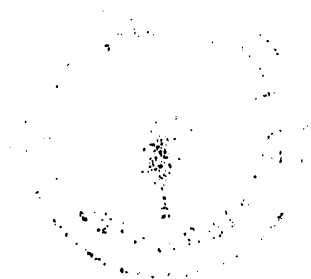
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SEVENTH EDITION

HARMONY MODERNIZED

A COURSE EQUALLY ADAPTED

FOR SELF-INSTRUCTION OR FOR
A TEACHER'S MANUAL

BY

MAX LOEWENGARD

TRANSLATED FROM THE SIXTH AUGMENTED AND THOROUGHLY REVISED
GERMAN EDITION

BY

DR. TH. BAKER

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TRANSLATOR'S PREFACE

The author of this manual is an instructor of ripe and varied experience, having taught classes in theory and composition at the conservatory of Wiesbaden (one year), the Scharwenka Conservatory in Berlin (1891-7), the Stern Conservatory (1897-1904, succeeding the celebrated pedagogue Ludwig Bussler), and since then at the Hamburg Conservatory. He has also had several years' practical work as a conductor of orchestra; is a composer of good repute, and a musical critic of note.

Like other thoughtful teachers of harmony, the deficiencies of the text-books in use were brought home to him daily. But their insufficiencies by no means blinded him to the underlying merits in their general scheme; a scheme so familiar to hundreds of thousands of teachers and students, that the substitution of a new system would mean a revolution which probably but few could be induced to join. And a new system was not required; the real difficulty lay in a few ancient restrictions quite inapplicable to present conditions, and in a multiplication of rules to fit special cases, with an attendant multiplication of exceptions. *How to fit the rules to meet the requirements of modern harmony*; — that was the problem. That the author has solved this problem, is a fact increasingly appreciated among the circles most vitally interested in the matter. The keynote of the work is *Simplification* — not simplification by omission, but simplification by inclusion. Under the three rubrics "Triads," "Seventh-Chords," and "Ornamental Changes in the Connection of Chords," the theory of chordal interconnection is developed in astonishingly simple and complete fashion. The treatment of the cadence in its position as a key to the art of composition, is perhaps the most original and important thing in the book; but also the sections on the minor mode, seventh-chords, the harmonizing of melodies, modulation, the fundamental principle of the altered chords, and the noteworthy absence of the usual string of "exceptions," deserve especial mention.

Taking all these points into careful consideration, the title "Harmony Modernized" will be found to be fully justified.

THE TRANSLATOR

AUTHOR'S PREFACE TO THE FIFTH EDITION

The fifth edition of my *Manual of Harmony* differs from those preceding it in some not unessential particulars.

Certain details are more clearly set forth, others have been rearranged and amplified, and still others comprehensively abbreviated. All these changes are based on the experience gained by me and my faithful co-workers during the years in which we have employed this book in teaching.

To Mr. Wilhelm Klatte are due many essential improvements which have thus been made in the work. And I have to thank Messrs. Paul Geyer and William Kritsch for many valuable suggestions.

MAX LOEWENGARD

HAMBURG, *September*, 1906

AUTHOR'S PREFACE TO THE SECOND EDITION

"Wagner, by his frequent employment of this chord, has made us aware that the 'augmented' triad is, like the major and minor triads, an independent harmony. In a Wagnerian sense, this harmony is one of the 'chords of characterization' — a typical chord. We theorists have given it a place in the system of chords, fixing its seat on the third tone of the minor scale." [Cyrill Kistler: *Harmonielehre*; Kissingen, 1898.]

Cyrill Kistler thus formulates a principle which has become axiomatic in musical theory; namely, that whatever occurs often must have a place assigned to it — must be classified.

The present *Manual of Harmony* is founded on an entirely opposite principle.

What is new in modern music, whatever will not fit into the old system of classification or conform to the ancient rules, cannot be reasoned out by adding new classes to the old ones, and stating new

PREFACE.

v

exceptions to the old rules. For that which is new in modern music is no arbitrary invention by one composer or another, but a logical and organic development from what preceded it.

Our task is, to remodel the old system of rules; — not by taking each separate case as the foundation for a rule, but by formulating the rules from the start in such fashion, that any given case shall represent a free development in the line of normal possibilities, and not an exceptional divergence. The rules must be broadened; — not by extending them to cover each individual case, but by detaching them from individual cases.

Differences in this Second Edition from its predecessor, are in the way of simplification. And these simplifications have grown out of the endeavor to meet the demands of the principle above stated.

MAX LOEWENGARD

CONTENTS

Introduction

PAGE

Part I: Triads

THE MAJOR MODE	1
THE MINOR MODE	14
INVERSIONS OF THE TRIAD	21
FAULTY PROGRESSIONS	30
THE CLOSING CADENCE	42
TO HARMONIZE A GIVEN SOPRANO	45
MODULATION	55

Part II: Chords of the Seventh

FORM AND CHARACTERISTICS	60
SEVENTH-CHORDS ON DEGREES V AND VII	62
INVERSIONS OF THE SEVENTH-CHORD	69
SEVENTH-CHORD ON DEGREE V (DOMINANT SEVENTH-CHORD) IN THE CADENCE	78
SEVENTH-CHORDS ON THE OTHER DEGREES	81
PREPARATION OF THE SEVENTH IN ALL SEVENTH-CHORDS EXCEPT THOSE ON DEGREES V AND VII	83
SEVENTH-CHORD ON DEGREE II IN THE CADENCE	93
USE OF THE DOMINANT SEVENTH-CHORD IN MODULATION	97
HARMONIZATION OF CHORALES	103

Part III: Ornamental Changes in the Connection of Chords

1. THE SUSPENSION	110
THE SUSPENSION AS A MEANS OF MODULATION	119
2. THE ANTICIPATION	120
3. ALTERED CHORDS	122
ALTERED CHORDS AS A MEANS OF MODULATION	136
ENHARMONICS; ENHARMONIC CHANGE	139
4. PASSING-NOTES AND CHANGING-NOTES	141
5. THE ORGAN-POINT	144

HARMONY MODERNIZED

INTRODUCTION

The Science of Harmony is the grammar of music. For any one who occupies himself with music, a knowledge of the science of harmony is just as indispensable, as a knowledge of grammar is to one who wishes to acquire more than a superficial acquaintance with a language.

The circumstance, that the harmony-exercises are — for very simple pedagogical reasons — not merely analytic, but, for the most part, necessarily synthetic, easily leads the pupil to regard them as preparatory work in composition; this they are, in point of fact, in no other sense than (let us say) orthographical and grammatical exercises are a preparation for writing poetry; — no less elementary, no less indispensable.

All chords may be classified in two groups:

- (1) Triads.
- (2) Seventh-chords.

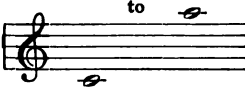
PART I

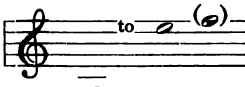
TRIADS


THE MAJOR MODE

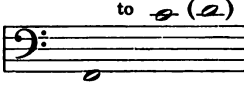
Every triad contains three tones, a Root with its Third and Fifth. Every tone of the scale may be taken as the root (fundamental) of a triad; that is, a triad may be sounded on each tone of the scale by adding to this tone its Third and Fifth. If, in so doing, only such tones are used as belong to the given scale, different kinds of triads will be formed, some having major Third and perfect Fifth, others minor Third and perfect Fifth, or (on degree VII) a triad with minor Third and diminished Fifth (this last also on degree II of the minor scale). These differences in the forms of triads will, for the present, not be taken into consideration.

The completest vehicle for musical expression on a modest scale, is the four-part chorus of mixed voices; hence, this four-part chorus has proved to be the best foundation for all exercises in harmony and counterpoint. For this reason, too, the following observations and exercises are based upon it.

SOPRANO. COMPASS: 

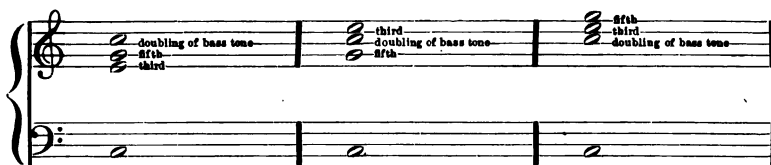
ALTO. COMPASS: 

TENOR. COMPASS: 

BASS. COMPASS: 

To make a triad sound *in four parts*, it will evidently be necessary to double *one* of its tones. In the first exercises, always double the bass tone (the root of the triad).

The different order in which the several tones of a triad may be set above the bass (root) causes no change in the triad as such. For instance, supposing we are to form the triad of C over the bass tone C, either of the three arrangements given below will be correct, as each contains the Third, E, the Fifth, G, and the bass tone C itself doubled in the octave:



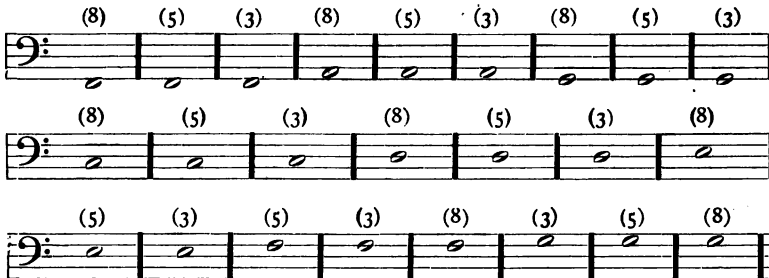
In each of these examples the tenor tone is followed, in the alto, by the next higher tone of the triad, and the alto tone is followed, in soprano, by the next triad-tone above the alto.

At present we shall not consider another manner of arrangement (although it fulfils the given conditions quite as well), in which a wider space is left between the several tones of the triad; thus:



Exercise. Form, over each of the following bass tones, its triad, doubling the bass tone in order that the triad may appear in four parts.

A figure (3) above the bass tone indicates, that the Third is to be in the soprano part; a (5) indicates, that the Fifth is to be in soprano; and an (8), that the octave is to be in soprano.

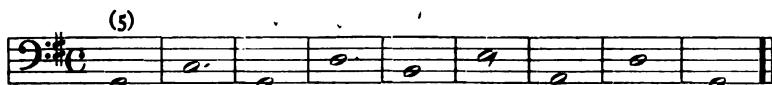


When several triads are to be connected one with the other, a natural means of connection is found in the tone or tones common to two successive triads, such common tones being retained in the same part. For example:

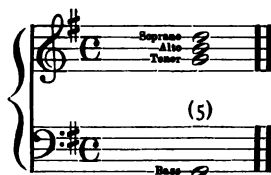


Here the (musically) logical connection between the triad *G-B-D* and the preceding triad *C-E-G* is to be effected by retaining the common tone *G*, first appearing in alto, in the same part.

Exercise. Form a triad over each of the following bass tones, and connect the successive triads by retaining the common tones in the same parts.



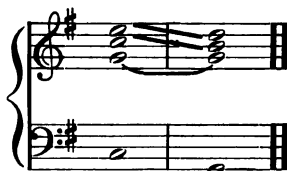
Solution. Form the triad on *G*, this being *G-B-D*. The figure (5) shows that the Fifth *D* must be in soprano; hence, *B* is in alto, and *G* in tenor:



The next triad, on *C*, is *C-E-G*, and has the tone *G* in common with the preceding triad *G-B-D*. The tenor, having this tone, will hold it in the second triad, thus affording a natural bridge for the connection of the two triads. The alto is to be led from *B* to *C*, this being the tone in the triad *C-E-G* lying next above the *G* in tenor; the soprano progresses from *D* to *E*, the tone in the triad *C-E-G* lying next above the *C* in alto.



The next triad, on *G*, is *G-B-D*. What common tone? *G*, again. What part had *G* before? The tenor. Therefore, the tenor holds the tone *G*; the alto goes from *C* to *B*, the soprano from *E* to *D*.



The next triad, on *D*, is *D-F#-A*. What common tone? *D*. In what part was *D* before? In the soprano. Therefore, the soprano holds the tone *D*; the alto goes from *B* to *A*, the tenor from *G* to *F#*.



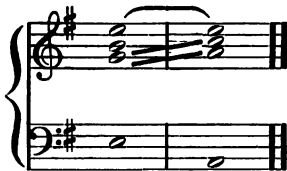
The next triad, on *B*, is *B-D-F#*. What common tone? Two, *D* and *F#*. *D* was in the soprano, and remains there; *F#* was in the tenor, and also remains there. The alto progresses from *A* to *B*.



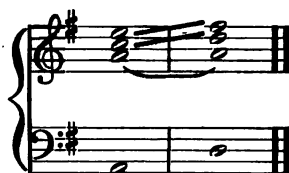
The next triad, on *E*, is *E-G-B*. Common tone? *B*. The alto had *B* before, and therefore retains it; the tenor goes from *F#* to *G*, the soprano from *D* to *E*.



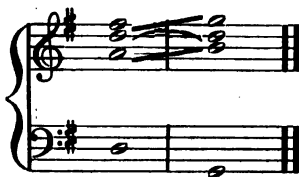
The next triad, on *A*, is *A-C-E*. Common tone? *E*. The soprano had *E* before, and retains it; the alto goes from *B* to *C*, the tenor from *G* to *A*.



The next triad, on *D*, is *D-F#-A*. Common tone? *A*. The tenor had *A*, and retains it; the alto goes from *C* to *D*, the soprano from *E* to *F#*.



The next triad, on G, is *G-B-D*. Common tone? *D*. The alto had *D*, and retains it; the soprano goes from *F#* to *G*, the tenor from *A* to *B*.



So the entire exercise would read thus:

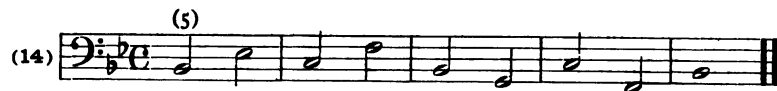
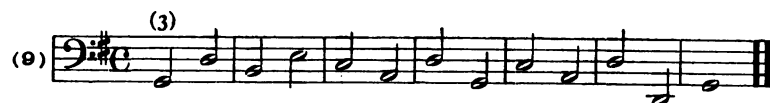
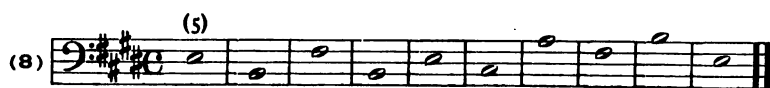


Work out the following exercises in the same manner.

- (1)
- (2)
- (3)
- (4)

THE MAJOR MODE.

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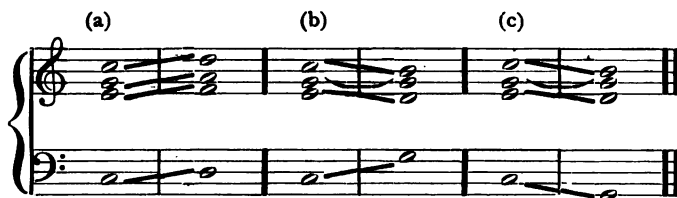


When two successive triads have no tone in common, lead the three higher parts in *contrary motion* to the bass.

There are three different kinds of motion (part-leading):

- (1) Parallel motion.
- (2) Oblique motion.
- (3) Contrary motion.

(1) *Parallel* motion occurs when two or more parts progress in the same direction, either up or down. Hence, at (a), the soprano, alto, tenor and bass all progress together in parallel motion; at (b), only the soprano and tenor; and at (c), soprano, tenor and bass.

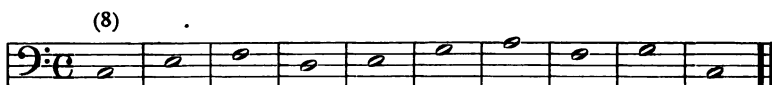


[Parallel motion, as defined above, is frequently called "*similar* motion;" the term "parallel" motion being then confined to part-movements in which the parts progress not only in the same direction, but also at the same interval. — TRANSLATOR'S NOTE.]

(2) *Oblique* motion occurs when one or more parts progress upward or downward while another part remains stationary. Thus, at (b), soprano and tenor progress downward and the bass progresses upward, in oblique motion to the stationary alto; at (c) all the other parts progress downward in oblique motion to the stationary alto.

(3) *Contrary motion** occurs between the parts when one is led upward and the other downward. At (a), above, there is no contrary motion; at (b) both soprano and tenor progress in contrary motion to the bass; while at (c), again, no contrary motion is found.

Exercise. Above each of the following bass tones form its triad, and effect the interconnection of the successive triads by retaining the common tones in the same part; where there is no common tone, lead the higher parts in contrary motion to the bass.



Solution. The triad on *C* is *C-E-G*. The figure (8) above the bass tone *C* indicates that the octave of the bass is to be taken by the soprano.



The next triad, on *E*, is *E-G-B*. Has *E-G-B* one or more tones in common with the preceding triad? Yes; the tones *E* and *G*. As the tenor had *E* before, this tone will remain in the tenor in the new triad; and *G*, being in the alto before, will remain in that part. The soprano progresses from *C* to *B*.



* *Contrary motion* is the most desirable manner of part-leading (and not merely within the narrow limits of these elementary exercises), because it most distinctly brings out the independence of the several parts; and it is the independence of the different parts which distinguishes, in no small degree, good music from inferior. From the very outset, in these exercises for forming and connecting harmonies, the feeling should be awakened and confirmed, that we have to do with independent parts which, inasmuch as they constitute chords, merely meet each other in common harmonic points of rest; and to this end it is urgently advisable that the treatment of the parts which is here formulated should be rigidly adhered to. For example, always say "the soprano goes (or progresses, or is led) from *D* to *E*," but not "*E* follows in the soprano," or the like.

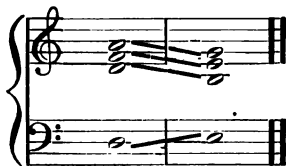
The next triad, on *F*, is *F-A-C*. Has *F-A-C* one or more tones in common with the preceding triad? No; consequently the three higher parts are to be led in contrary motion to the ascending bass. So the soprano is not led upward, to *G*, but downward, to *A*; the alto downward to *F*; the tenor downward to *C*.



The next triad, on *D*, is *D-F-A*. Has *D-F-A* one or more tones in common with the preceding triad? Yes; the tones *F* and *A*. As *F* was in the alto before, it will remain in the same part in the new triad; *A* will also remain in the soprano; the tenor goes from *C* to *D*.



The next triad, on *E*, is *E-G-B*. Has *E-G-B* one or more tones in common with the preceding triad? No; consequently the three higher parts are to be led in contrary motion to the ascending bass. So the soprano is not led upward, to *B*, but downward, to *G*; the alto downward to *E*; the tenor downward to *B*.



The next triad, on *G*, is *G-B-D*. Has *G-B-D* one or more tones in common with the preceding triad? Yes; the tones *G* and *B*. As *G* was in the soprano before, it will remain in the same part in the new triad; *B* will also remain in the tenor; the alto goes from *E* to *D*.



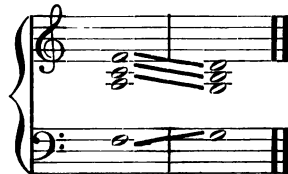
The next triad, on *A*, is *A-C-E*. Has *A-C-E* one or more tones in common with the preceding triad? No; consequently the three higher parts are to be led in contrary motion to the ascending bass. So the soprano is not led upward, to *A*, but downward, to *E*; the alto downward to *C*; the tenor downward to *A*.

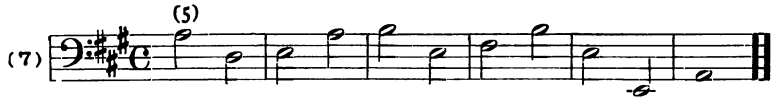


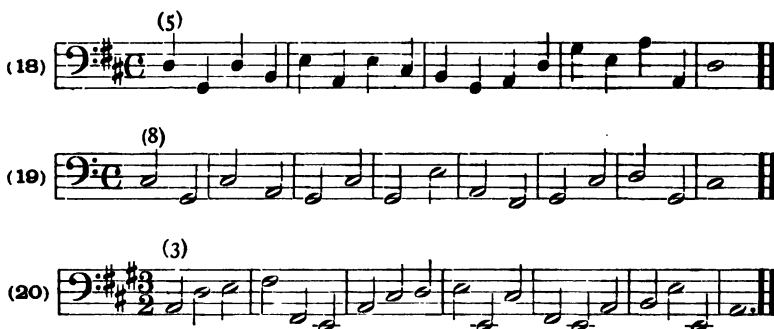
The next triad, on *F*, is *F-A-C*. Has *F-A-C* one or more tones in common with the preceding triad? Yes; the tones *A* and *C*. As *A* was in the tenor before, it will remain in the same part in the new triad; *C* will also remain in the alto; the soprano goes from *E* to *F*.



The next triad, on *G*, is *G-B-D*. Has *G-B-D* one or more tones in common with the preceding triad? No; consequently the three higher parts are to be led in contrary motion to the ascending bass. So the soprano is not led upward, to *G*, but downward, to *D*; the alto downward to *B*; the tenor downward to *G*.







THE MINOR MODE

The Minor Mode* was developed side by side with the Major Mode. But, in spite of their simultaneous development and employment, the minor mode, even at this late day, is not as familiar to the ear and the musical sense as the major. There still seems to be something remote about it; as if music heard in minor could realize its true shape and inward meaning, distinct and unveiled, only when translated into major. Again, many a theme which lacks neither value nor significance in minor, unexpectedly bears the stamp of hopeless triviality when given out in major; and, contrariwise, a strain which seemed quite insignificant in major, assumes in minor a certain air of importance.

In naturalness and clearness of expression the minor mode does not yet appeal to us as directly as the major mode.

The demand for unmistakable clearness is most imperative in the formation of the *Close*.

The closing cadence ending with the minor triad was so unsatisfactory to the ear, that the accustomed close in major, on the tonic major triad, was adopted as the only satisfactory ending even for pieces written in minor.

The *harmonic* analogy to the major close was established by letting compositions written in minor end on the familiar, accepted *major* tonic chord. The illustrations are from Bach's "Well-Tempered Clavichord."

* A Mode is one of the two groups of scales and keys, major or minor, taken collectively; that is, all major scales and keys are in the Major Mode, and all minor scales and keys in the Minor Mode; a composition founded on major keys is said to be written in the Major Mode, or "in major"; and similarly of a piece written in minor. [TRANSLATOR'S NOTE.]

Fugue II.



Fugue IV.



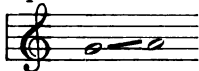
Fugue VI.



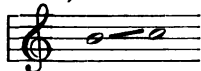
Fugue XII.



Precisely the same process affected the melody-line. The melodic close (in *a* minor):



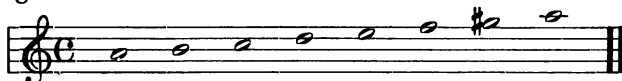
gave such an unsatisfactory effect, that the accustomed semitonic close in major (as in *C* major):



was transferred to pieces written in minor, as forming the only real closing cadence.

The *melodic* analogy to the major close was established by letting compositions written in minor end with the accepted melodic close of a semitonic step.

In all cases where such a melodic cadence (the melodico-authentic cadence) is required, (*but in such cases only*), the seventh degree in minor is raised. And from thus raising the seventh degree, in order to obtain a melodico-authentic close, there resulted, first of all, the following scale:

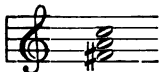


Thereupon, the step of the augmented second (*F-G#*) was avoided by a melodic compromise — the raising of the sixth degree by a semitone (*F* to *F#*).

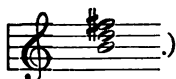
The fact, that this *F#* is nothing more than a melodic compromise, that this *F#* has absolutely no place as a tone proper to the scale of *a* minor, has remained clear and undimmed to our musical consciousness. No one has ever attempted to give houseroom to *F#* as a tone *proper to the scale* of *a* minor. (The result would have been to make the triad on the fourth degree of *a* minor



that on the sixth degree



and that on the second degree



But the other fact has gradually been lost sight of, that the *G#* in *a* minor, like the *F#*, is nothing more than a melodic compromise; that *G#* is merely a tone borrowed for the purpose of establishing the analogy to the customary melodic major close; and that this tone *G#* has no standing whatever as a tone *proper to the scale* of *a* minor. The recognition of *G#* as a tone proper to the scale of *a* minor was an arbitrary theoretical act entirely contrary to the true

nature of the case. (Compare p. 20, for the resulting conclusion, that the triad on the third degree in *a* minor would then have to

be called .)

No further proof is required that the seventh tone of the minor scale belongs to the key *without being raised*, than the fact that its position has for a long time been practically recognized in the signature. For instance, the signature of *C* minor has *B* flat (the signature serves to establish the tones belonging to the key); and this *B* flat is raised to *B* natural only when actually used as a leading-tone, that is, when it leads into the tonic in the regular form of the melodic cadence with its characteristic upward tendency (for that is all that this semitonic raising amounts to).

"The major seventh *B* natural is separated from the octave of the tonic, *C* by only a semitone, the narrowest interval of the scale; by reason of this nearness to the tonic, it may be sounded quite easily and confidently.

"*B* seems like a kind of suspension before *C*; in taking this step it is justified to the hearer, too, only because of its leading up to *C*. Hence it is said, that *B* leads into *C*. *B* is leading-tone to the tonic, *C*. Thus it happens, that the very scale-tone whose relationship to the tonic is weakest, is raised to especial importance. This characteristic has become growingly insistent in modern music, with the result, that in ascending progression to the tonic the major seventh has been preferred in all keys, even in those to which it was originally foreign. This change appears to have begun in Europe during the period of polyphonic music; not merely, however, in vocal music having several parts, but also in the unison *cantus firmus* of the Roman Church. It was censured in 1322 by a decree of Pope John XXII. In consequence, the raising of the leading-tone was generally omitted in notation, although the singers themselves continued the practice in actual performance." [Helmholtz: "On Sensations of Tone."]

"The introduction of such an ascending leading-tone threatens to react from European music to the disfiguration of the folk-melodies of distant peoples. Fortlage cites the following interesting case: 'A favorite national melody of the Swedes begins as follows:



In modern times the Swedes sing, in the first measure, *D* sharp instead of *D* natural, thus disfiguring this venerable relic. An Esthonian congregation, even though the organ should play *D* sharp at its loudest, would sing *D* natural with the greatest confidence. — In the chorale *Höchster Priester, der du dich* there is a quite analogous passage in the third strophe:



At a recent performance by Esthonian singers in our St. Mary's church at Dorpat, I heard this chorale sung; the accompaniment gave *D* sharp, loud and clear, while the sopranos sang *D* natural with equal confidence." [Von Öttingen: "Das Harmoniesystem in dualer Entwicklung;" Karow, Dorpat, 1866.]

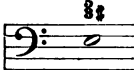
The *historical process* was as follows: The minor mode, having originally no leading-tone, borrowed one, as time went on, for a special case — *to form the authentic cadence*.

The *physical justification* for employing the leading-tone in minor rests simply upon its *nearness to the tonic* — not upon its relationship to or membership in the scale.

In *musical practice* the leading-tone is employed in minor only when it leads, in a genuine authentic cadence, upwards into the tonic; the seventh degree being raised only when it is *to be fully endowed with the leading-tone quality*.

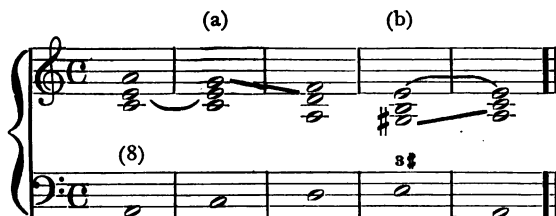
Then why, in contradiction of historical truth, in defiance of physical logic and musical practice, assert that a tone belongs to the scale, when in point of fact it does not?

Moreover, by recognizing the *non-raised* seventh tone of the minor scale as *belonging* to the scale, we can explain an entire series of otherwise inexplicable contradictions. On this point more will be said under "Seventh-Chords" and "Altered Chords."

In the following exercises, wherever the seventh tone has to be raised (that is, when a leading-tone is wanted), the raising will be specially indicated. For instance,  signifies, that a triad with raised Third is to be formed over *E*; thus:





Where the raising of the Third is not indicated, the tone *proper to the scale*, that is, *the seventh degree not raised*, takes its rightful place, as in the example below:



At (a) no leading-tone is required, and so the tone *G* proper to the scale of *a* minor is taken. At (b), on the other hand, where a leading-tone is needed, the true scale-tone *G* is replaced by the foreign tone *G* \sharp .

EXERCISES IN MINOR

- (1) 
- (2) 
- (3) 
- (4) 
- (5) 
- (6) 
- (7) 
- (8) 
- (9) 
- (10) 

Five musical staves, numbered (11) through (15), are shown in bass clef. Each staff contains a sequence of notes with slanted lines above them, indicating contrary motion. Triad symbols (three dots) are placed above specific notes. Staff (11) has a key signature of one sharp (F#) and a common time signature. Staff (12) has a key signature of two flats (Bb, Eb) and a common time signature. Staff (13) has a key signature of one flat (Bb) and a common time signature. Staff (14) has a key signature of two sharps (F#, C#) and a common time signature. Staff (15) has a key signature of two flats (Bb, Eb) and a common time signature.

The slanting lines in the bass show that, despite common tones, contrary motion should be employed (either to improve the melody-line of the soprano, or to avoid the unvocal step of the augmented second).

The seventh degree of the scale does not always possess the quality of leading-tone, even in major — in fact, only in case it is either *root* or *Third* (that is, in the triads on the fifth and seventh degrees), but never when it is a Fifth (as in the triad on III).

Whatever significance a tone may have in its relation to the scale, as soon as it assumes the character of a Fifth to some other tone (the latter then being the root), it loses that significance, assuming a relation of complete independence in its new character of Fifth to its root, as a tone consonant and self-evidently belonging to this root (cf. p. 60).

In the triad on the seventh degree in minor, the seventh scale-tone will *always* be raised; *generally*, in the triad on V; *never*, in the triad on III. The chord-form

A musical notation for a triad on the seventh degree in minor. It consists of a grand staff with a treble clef and a bass clef. The treble clef staff contains a triad of notes: G#4, A4, and B4. The bass clef staff contains a single note: G3. The key signature is one flat (Bb).

is not the triad on the third degree in *a* minor, but a triad altered by the introduction of a foreign tone; we shall take it up again in a subsequent chapter. The triad on III in *a* minor is properly *C-E-G*, being no more referable to *C* major than, for instance, the triad on III in *C* major (*E-G-B*) is referable to *e* minor.

Wherever the seventh degree bears the character of leading-tone, it should not be doubled.

All so-called "tendency-tones" (tones whose progression is prescribed) are not suited for doubling.

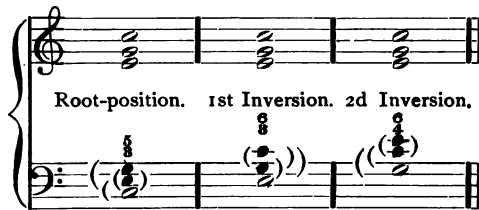
INVERSIONS OF THE TRIAD

Differences in the arrangement of the tones of a triad over the same bass tone (root of the triad) in no way alter the triad as such. But as soon as the bass tone itself participates in the rearrangement, that is, as soon as the bass sings some tone other than the root, an *Inversion of the triad* takes place.

Every triad may have two inversions:

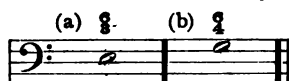
- (1) The *First Inversion*, in which the *Third* replaces the root in the bass.
- (2) The *Second Inversion*, in which the *Fifth* replaces the root in the bass.

On measuring the intervals formed by the tones of the triad with the new bass tone, we obtain a new figuring for each inversion; namely, $\frac{6}{3}$ (chord of the Third and Sixth; usually called chord of the Sixth); and $\frac{6}{4}$ (chord of the Fourth and Sixth, or the four-six chord)

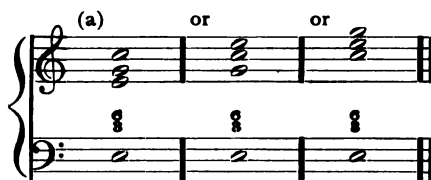


To form a chord of the Sixth ($\frac{6}{3}$) above a given bass tone, we might simply find the third and sixth scale-tones above the bass; to form a four-six chord, we might look for the fourth and sixth scale-tones above the bass. But let us rather decline, from the outset, to follow this mechanical method, and try to solve the problem by referring any inversion to its root-position, somewhat after the manner following:

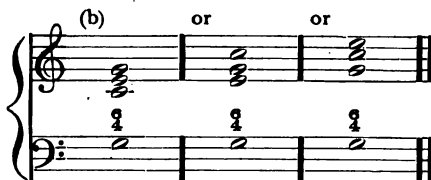
Exercise. — Form the chords called for by the figuring



Solution. (a) Every $\frac{6}{3}$ chord is the inversion of a triad, in which the Third replaces the root in the bass. The given bass tone, *E*, is the Third of *C*; consequently, the inversion we have to form is that of the triad on *C*, *C-E-G*. In other words, we have to do with the triad on *C*, *C-E-G*, not in the root-position, but in an inversion in which the bass sings the Third (instead of the root) — that is to say, in the first inversion, as a chord of the sixth ($\frac{6}{3}$).



(b) Every $\frac{4}{4}$ chord is the inversion of a triad, in which the Fifth replaces the root in the bass. The given bass tone, *G*, is the Fifth of *C*; consequently, the inversion we have to form is that of the triad on *C*, *C-E-G*. In other words, we have to do with the triad on *C*, *C-E-G*, not in the root-position, but in an inversion in which the bass sings the Fifth (instead of the root) — that is to say, in the second inversion, as a four-six chord ($\frac{6}{4}$).

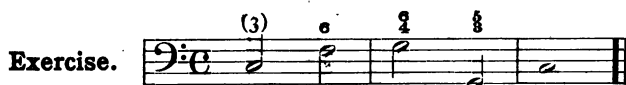


N.B. When measuring upward from the bass tone, the first inversion is briefly indicated by a 6 instead of by $\frac{6}{3}$; for this suffices to show the interval from the Third (bass tone) to the root, these being the intervals whose relation is essentially affected by the inversion.

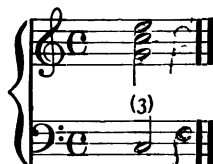
To make the inversion a chord in four parts (as already done in the root-position), the bass tone — now the Third — is doubled.

The interconnection of the inversions of the triad, or their con-

nection with triads in the root-position, is effected in the same way as before. Common tones are to be held in the same parts; where no common tone is present, the higher parts progress in contrary motion to the bass.



Solution. The triad on *C* is *C-E-G*; the soprano is to take the Third.



The following chord of the sixth (or sixth-chord, for short) is the inversion of the triad in which *F* is the Third; that is, the inversion of the triad on *D*, *D-F-A*.

Now, this triad *D-F-A* is to be employed as a sixth-chord, and connected with the preceding triad.

Have they any tones in common? No. So the higher parts go in contrary motion to the bass ascending from *C* to *F*. The *E* in soprano goes to *D*; the *C* in alto, to *A*; the *G* in tenor, to *F*.



The following four-six chord on *G* is an inversion of the triad in which *G* is the Fifth; that is, the inversion of the triad on *C*, *C-E-G*.

Now, this triad *C-E-G* is to be employed in the second inversion, as a four-six chord, and connected with the preceding sixth-chord. Have they any tones in common? No. Therefore, contrary motion. The soprano goes from *D* to *C*; the alto, from *A* to *G*; the tenor, from *F* to *E*.

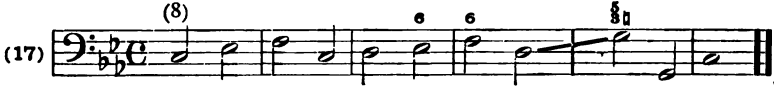
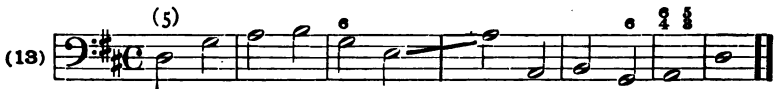


The entire exercise would read thus:



EXERCISES.

- (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- (7)





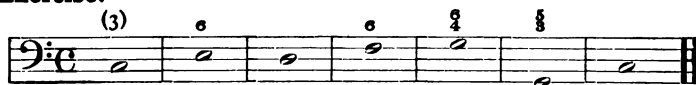
In the above exercises four-part chords were formed by doubling the bass tone.

With sixth-chords, however, it is advisable not to double the bass tone (now the Third of the triad), but either of the other tones of the triad (the root or the Fifth).

The bass tone of the sixth-chord is the Third of the triad. Of the three tones of the triad, the Third is least suitable for doubling, because of its peculiar prominence as the tone which defines the major or minor character of its chord.

Suppose yourself just entering a concert-hall and hearing abruptly, quite unconnected with any preceding strains, a triad sounded *fortissimo* by the orchestra. Your first impression would be (even if you are possessed of "absolute pitch"), not that of a determinate pitch, as if you thought to yourself "those tones were A-C#-E" (or whatever they might be), but "that was *major*," or "that was *minor*". The first and most vivid impression is that of major or minor, as the case may be; that is, *the Third*. And a tone which, in itself, is strongly noticeable, does not need to be made prominent by doubling, which may easily render it obtrusive.

Exercise.

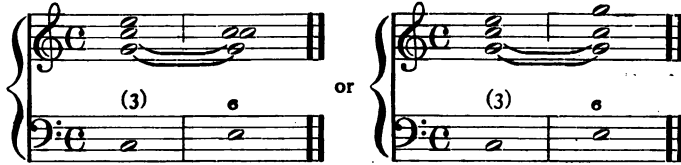


Solution. The triad on C is C-E-G. The figure (3) shows that the Third of C, which is E, should be taken by the soprano. Hence, soprano, E; alto, C; tenor, G.

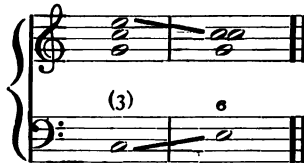
The sixth-chord on E is an inversion of the triad on C, C-E-G.

Common tones? Yes, all three: C, E and G. As G was in the tenor before, it will remain in that part in the new chord; C, being in the alto before, will likewise remain in the alto. And E, being already in the soprano, would also remain in the same part in the

new chord if *E* were not the bass tone of a sixth-chord, whose doubling is best avoided. Therefore, this *E* in soprano will be led either to *C* or to *G*.

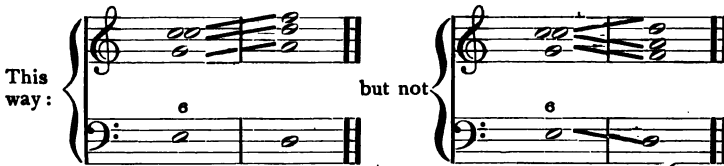


Whether *G* or *C* is chosen for doubling instead of *E*, is immaterial, the interval in either case being only a third. Otherwise we should follow the maxim, "the shortest way is the best." Here, for the sake of effecting contrary motion to the bass (see Note on page 9), we shall choose *C*:



The next triad, on *D*, is *D-F-A*. Common tones? No; therefore, contrary motion; tenor *G* goes up to *A*, alto *C* goes up to *D*; and soprano *C* up to *F*.

The beginner should not make the mistake of starting the contrary motion by leading the *C* in soprano up to *D*, and thinking that by so doing he has effected the desired contrary motion; for then alto and tenor would progress downward in parallel motion with the bass, *C* down to *A* and *G* down to *F*, leaving the *C* in soprano (which is really only a substitute for the avoided *E*) to carry out the contrary motion quite unsupported.



The following sixth-chord, on *F*, is the inversion of the triad on *D*, *D-F-A*. Common tones with the preceding chord are *D*, *F* and *A*. This *A*, being in the tenor before, remains there in the new

(4)

(5)

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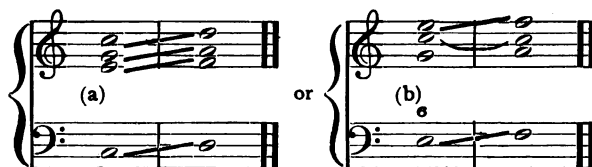
(9)

(10)

(11)

(12)

(13)



do not sound well.

The reason for this bad effect is, that at (a) *parallel octaves* occur between bass and soprano (C to D), and *parallel Fifths* between bass (C to D) and alto (G to A); and at (b) *parallel octaves* occur between bass and soprano (from E to F).

Rule 1. *Parallel octaves are to be avoided.* They arise when two parts progress together, at the interval of an octave, from one chord to another.

Rule 2. *Parallel Fifths are to be avoided.* They arise when two parts progress together, at the interval of a Fifth (or Twelfth), from one chord to another.

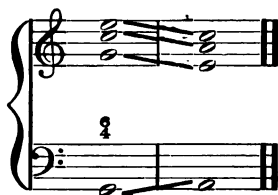
As a reason for the ill effect of parallel octaves it is often rightly stated, that by such progression one part loses its independence; and this same reason holds good in the case of parallel Fifths. Whether two parts sing the same thing (the octave) or one of them repeats a subordinate adjunct (the Fifth) of the other, makes no essential difference; in either case the one part is dependent on and subordinate to the other. "The accompaniment of the Fifth, occurring as an isolated instance in the midst of a polyphonic passage, is open to the charge of monotony, and can, therefore, not be consistently employed as an accompaniment; hence, it should always be avoided." [HELMHOLTZ, "Sensations of Tone."]

The following exercises are to be worked out without faulty progressions; always keeping in view the fact, that neither the holding over of common tones by the same part, nor the employment of contrary motion to the bass, is invariably and as a matter of course a guaranty for correct part-leading (that is, for the avoidance of faulty progressions). Should faulty progressions occur, in spite of holding over common tones in the same part, it will be advisable to let the common tones go and introduce contrary motion; should objectionable progressions occur even when contrary motion is employed, the best plan will be to change the part-leading at some suitable *preceding* place in such a way that they may be avoided, rather than to try to better them by altering the natural progression of any one part just at the place where they occurred.

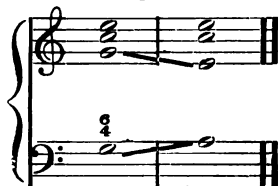
For example, here



it is better to correct the parallel octaves by employing contrary motion:



than by changing (say) the leading of the tenor:



And in the following case:



in order to avoid the parallel Fifths between tenor and soprano it will be better to give up the common tones in the preceding measure:



than to change the leading of either the soprano



or the tenor:



Where a suitable alteration in preceding measures can not be brought about naturally, and the employment of contrary motion also leads to a faulty progression, as in the two cases below:

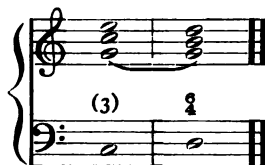


give up the arrangement of the tones hitherto in use, by which the three higher parts were confined to neighboring intervals of the triad, and lead the parts in *open harmony*.

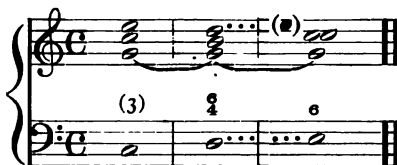
**Exercise.**

Solution. The triad on *C* is *C-E-G*; the figure (3) shows that the Third, *E*, should be taken by the soprano; the tenor takes *G*, the alto *C*.

The succeeding $\frac{6}{4}$ chord on *D* is an inversion of the triad on *G*, *G-B-D*. Common tones? *G*. As *G* was in the tenor before, it will remain in the tenor in the newly formed chord; the alto goes from *C* to *B*, the soprano from *E* to *D*.



The following chord of the sixth, on *E*, is an inversion of the triad on *C*, *C-E-G*. Common tones? *G*; hold in tenor; the alto goes from *B* to *C*, and the soprano would progress from *D* to *E* if *E* were not the bass tone of a sixth-chord whose doubling is to be avoided, and if parallel octaves between bass and soprano did not result. Consequently, the *D* in soprano will avoid *E*, and go to either *C* or *G*; and as *C* is the nearer, we choose *C*.



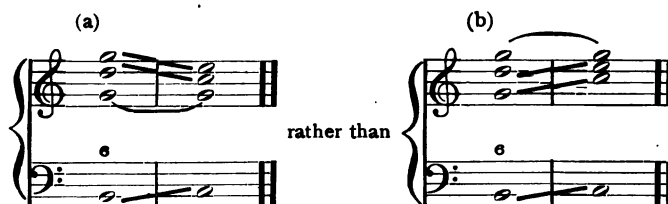
The next triad, on *C*, is *C-E-G*. Common tones? *C* and *G*. So *G* will still be held in the tenor; *C* will remain in the alto; and the soprano is led to *E*.



The following chord of the sixth, on *B*, is an inversion of the triad on *G*, *G-B-D*. Common tones? *G*; hold it in the tenor; the alto *C* would go to *B*, if *B* were not the bass tone of a sixth-chord whose doubling is to be avoided, so it may go to either *G* or *D*; *D* being the nearer, it is chosen. The soprano would naturally go to *D*; but in order to give this prominent melodic part more variety, we shall lead it to the *G* above:



The next triad, on *C*, is *C-E-G*. Common tones? *G*. Now it happens that a *G* is present in both tenor and soprano of the preceding chord of the sixth. In such a case the common tone should always be held by that part which, by retaining the tone, causes the other parts (or at least one of them) to progress in contrary motion.



Furthermore, in (a) the melodic character of the soprano is better maintained than in (b).

The next triad, on *G*, is *G-B-D*. Common tones? *G*. As *G* was in the tenor before, it will remain there in the new triad; the alto goes from *C* to *B*, the soprano from *E* to *D*.



The following sixth-chord, on *A*, is an inversion of the triad on *F*, *F-A-C*. Common tones? No; consequently we employ contrary motion to the bass; the *D* in soprano goes downward to *C*, and the *B* in alto would go downward to *A*, were not *A* the bass tone of a sixth-chord, and therefore not to be doubled — so the alto goes to *C*.

However, if we lead the soprano to *C* and the tenor to *F*, parallel Fifths result:



Therefore, the *D* in soprano, avoiding *C*, will be led to *F*:



The following $\frac{6}{4}$ chord on *G* is an inversion of the triad on *C*, *C-E-G*. Common tones? *C*. *C* will be held over in the alto; the soprano goes from *F* to *E*, the tenor from *F* to *G*:



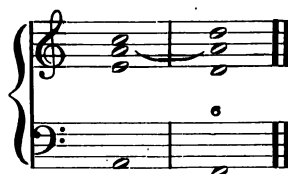
The next triad, on *A*, is *A-C-E*. Common tones? *C* and *E*, in alto and soprano; if both were held, the tenor would progress from *G* to *A* in octaves with the bass:



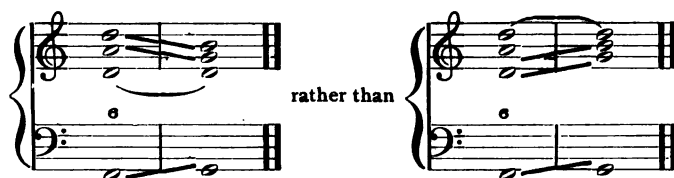
Hence, we give up the common tones, and employ contrary motion to the bass; the soprano *E* will go downward to *C*, the alto *C* downward to *A*, and the tenor *G* downward to *E*:



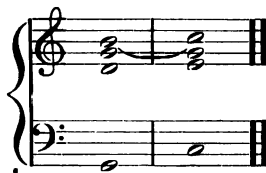
The following chord of the sixth, on *F*, is an inversion of the triad on *D*, *D-F-A*. Common tones? *A*. Hold *A* in the alto; the soprano *C* goes to *D*, and the tenor *E* would go to *F* if *F* were not the bass tone of a chord of the sixth, and not to be doubled. So the tenor *E* goes to *D*, instead of *F*, thus:



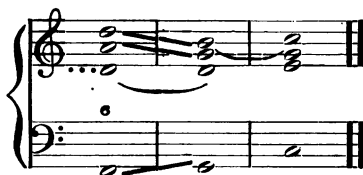
The next triad, on *G*, is *G-B-D*. Common tones? *D*. As we already have *D* both in tenor and soprano in the chord preceding, it may be held in either tenor or soprano; in this case we shall leave the common tone in that part which, by retaining the tone, causes the other parts to progress in contrary motion to the bass (see p. 35); thus:



The next triad, on C, is C-E-G. Common tones? G. The alto holds G; the tenor goes from D to E, the soprano from B to C:



The entire exercise would read as follows:



The exercises given below are to be worked out in accordance with the foregoing.

EXERCISES



(3) 

(4) 

(5) 

(6) 

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(11) 

(12) 

N.B. The slanting line from *D* to *G* indicates that here, in spite of the common tone *D*, contrary motion should be introduced to improve the melody-line of the soprano part.

(13)

(14)

(15)

(16)

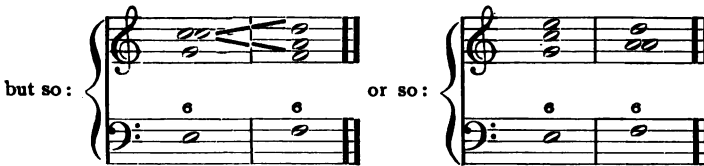
(17)

(18)

(19)

(20)

When two or more chords of the sixth follow each other, double the bass tone of one of them, otherwise the character of four-part harmony will be endangered by successive chords in three parts. For example, do not write thus:



To facilitate the application of all the foregoing exercises to practical work, and to gain a clear insight into the intimate connection between what we have learned in four-part harmony and other music which, at first sight, does not look like four-part writing, in which four parts are not always sounding together, it is advisable to *rewrite* some of our former exercises *for the piano*, in some such form as the following: Let the soprano, as a sustained melody-line, enter together with the bass, while (a) the alto and tenor follow in succession as the second and third members of a triplet in quarter-notes, or (b) are struck together as a second quarter after soprano and bass; thus:



The image displays three musical staves, each representing a different harmonic variation. The first staff is a grand staff with treble and bass clefs, showing a sequence of chords and melodic lines. The second staff is labeled (b) and shows a variation with Soprano, Alto, and Tenor parts indicated by 'x' marks. The third staff is labeled (3) and shows another variation with a different harmonic structure.

Do not fail to write out similar variations at the end of each chapter.

THE CLOSING CADENCE

All artistic sense of form finds its climax in the consciousness of finality, in the necessity for a conclusion. This is its most primitive, and also its most imperative, expression. An entire composition, or any section of it, appeals to us as finished in form only when we have actually heard its termination.

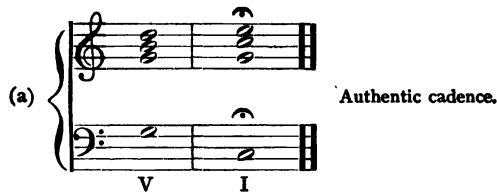
In all the arts, those means of expression which most fully satisfy our sense of formal finality, which have maintained themselves as the sharpest and clearest manifestations of finished form, have developed into typical concluding formulas, and, as such, are repeated over and over again.

Do not be afraid to repeat these formulas; do not try to avoid them for the sake of making original closes; the close of a piece does not so much require to be original, as to have the effect of a genuine conclusion.

Closes, or Closing Cadences, are classified, according to the number of chords used in their construction, as Two-chord, Three-chord, or Four-chord Cadences.

I. THE TWO-CHORD CLOSING CADENCE

It is formed (a) by the succession of the dominant chord (degree V) and the tonic triad (degree I); for instance, in *C* major:

(a)  Authentic cadence.

V I

or (b) by the subdominant triad (degree IV) and the tonic triad (degree I); for instance, in *C* major:

(b)  Plagal cadence.

IV I

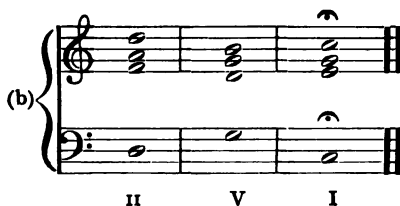
THE THREE-CHORD CLOSING CADENCE

It is formed (a) by the succession of the subdominant triad (degree IV), the dominant chord, and the tonic triad; for instance, in *C* major:

(a) 

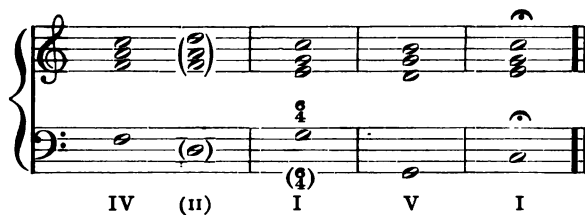
IV V I

or (b) the triad on degree II, the dominant chord, and the tonic triad; for instance, in *C* major:



3. THE FOUR-CHORD CLOSING CADENCE

It is formed by the succession of the subdominant chord (the triad on degree IV or II), the second inversion (four-six) of the tonic triad, the dominant chord, and the tonic triad; for instance, in C major:



Now analyze the closing cadences of all the foregoing exercises, to see whether they are authentic (V-I), or plagal (IV-I), or three-chord (IV-V-I , or II-V-I), or four-chord ($\text{IV [II] I}_6^6\text{-V-I}$); indicate the successive degrees by Roman numerals; and play the cadences on the piano.

Analyze closes in preceding exercises, as in this example:



Employ the Roman numerals as follows: For the major triads, large capital letters (I, V, IV); for the minor triads, small capitals (II, III, VI); for the diminished triad, small capitals with a $^\circ$ appended (vii°).

Just here the pupil is especially warned against the old prejudice which would forbid the employment of the piano in all theoretical work. *Play all the exercises on the piano.* For him who can instantly hear, in his mind's ear, whatever he sees on paper, or writes himself, this playing over the exercises will form an excellent check on his work; and anyone who cannot hear at sight, will find this playing an indispensable aid, the only means, in fact, for acquiring that faculty.

TO HARMONIZE A GIVEN SOPRANO

The harmonizing a given soprano is, in itself, an exercise in composition. Whoever is more or less endowed musically, will instinctively hear the harmonies to any given melody constructed in true musical form. But even this most primitive sort of musical inspiration should not be considered as a condition for the following exercises. The only condition is, what we have learned in the preceding pages; and only what has been so learned is to be used in working out these new exercises.

So far we have mentioned fixed successions of chords only in connection with the closing cadence.

These familiar chord-successions of the closing cadence are the only ones which are generally accepted as logical in a musical sense. The following:

$$\begin{array}{ccccccc}
 & & & & & & \text{V—I} \\
 \text{IV} & - & - & - & - & - & \text{I} \\
 \text{IV} & - & - & - & - & - & \text{V—I} \\
 \text{II} & - & - & - & - & - & \text{V—I} \\
 \text{IV—I}_4^6 & - & - & - & - & - & \text{V—I} \\
 \text{II—I}_4^6 & - & - & - & - & - & \text{V—I}
 \end{array}$$

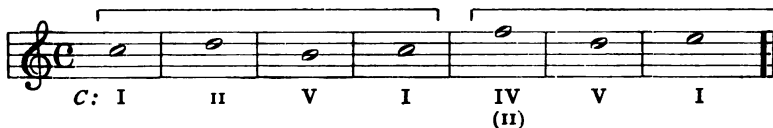
are certainly logical formulas.

Nothing could be more natural, therefore, than to try to use these same chord-successions in the midst of a piece, as well as at the close.

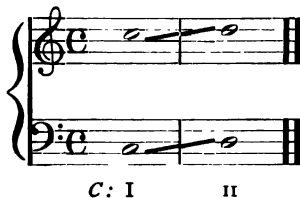
Consider a given melody as consisting of melodic sections, and try to employ one of the cadence-formulas for each section. For instance, this melody:



may be divided into two sections by setting off the closing cadence. The first section begins and ends on the tonic triad. Now, the tonic triad, considered as a limit or conclusion, is logically preceded, as we know by experience, by the chord-successions IV-V or II-V. As *D*, in the melody given, is not present in the triad on IV, it is evident that the triad on II is wanted here :



If we attempt to employ all the triads, thus chosen, in root-position, parallel octaves will appear in the very first progression :

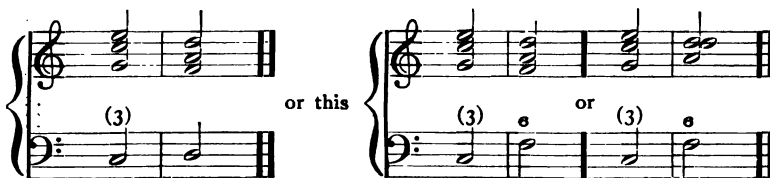


Consequently, we must take an inversion of the triad:



As a substitute for the root-position of any triad (except at the close, which gives an effect of finality only with the root-position of the tonic triad), its first inversion (sixth-chord) may be taken. But the second inversion of a triad (four-six chord) cannot be used at will.

For example, try the following on the piano:



but not

or this

but not

The four-six chord, wherever it enters unprepared, unless appearing under certain special conditions, has a cadencing effect; that is, an effect as if it belonged to a closing cadence as a forerunner of the dominant chord leading into the tonic triad of its key. The entrance of the chord of the fourth and sixth in the following:

makes the impression of introducing a cadence closing in the key of the same triad, whose inversion the said $\frac{6}{4}$ chord was; as shown below:

C: I d: i $\frac{6}{4}$ V I

The $\frac{6}{4}$ chord loses this cadencing effect, which is suitable only for a closing cadence, *solely when it enters as a passing-chord* — that is, when its bass tone (the Fifth of its triad) leads stepwise from the preceding into the next-following bass tone; because, by virtue of **this**

position, it is a mere passing-note finding its points of support in the two neighboring bass tones — *and when its Fourth* (root of the triad of which it is the inversion) *is contained in the preceding chord*; for example:



Instead of the tonic triad, the triad on VI may be used, except for a close (*cf.* p. 63).

The harmonic development of a melody now becomes decidedly freer by the substitution of the triad on VI for the tonic triad, and by the employment of sixth-chords instead of triads in the root-position, even within the narrow limits set by a continual reference to the cadence-form; the possible range of variety in the harmonizing of a melody has thus been considerably extended.



G: I V I IV I II V I

G: I V VI IV I II V I

The following harmonic working out:

G: I V VI IV I $\frac{4}{2}$ II V I

is not good, because the four-six chord comes in the wrong place, and not directly before the dominant chord. A repetition of a cadence (II-V-I) immediately after sounding the four-six chord, has the effect of loquacity which does not know when to stop. So do not write this way:

I $\frac{4}{2}$ II V I *instead of* II I $\frac{4}{2}$ V I

An effect equally over-loquacious, tending toward weakness, is caused by repeating the dominant chord.

This statement finds no contradiction in the fact, that in choral and orchestral works broad dominant-repetitions frequently achieve the grandest intensifications. The dominant chord so decidedly awakens an expectation of the following tonic (or its substitute), that putting off its entrance either creates eager suspense, or — and this almost always, in simple part-writing — seems like a superfluous repetition of something self-evident.

It is also generally best to avoid the succession V-IV or V-II (dominant harmony and subdominant harmony). Wherever employed, the effect of the dominant is much like a half-cadence, after which the subdominant chord sounds like a recommencement.

Another possible way of harmonizing the above melody would be to consider measure 6 as belonging, together with measure 4, to one and the same subdominant harmony (degree II). This being assumed, the triad on degree II (*A-C-E*) would have to be connected with a triad on the same degree by the melody-tone *B*.

Now, the triad of any given degree, taken as an objective point, can be reached through the triad on its own Fifth.

Hence, we can reach the triad on *A* by letting the triad on its own Fifth (that is, the triad on *E*, degree VI from the tonic) precede it:

G: II VI II

Taking the whole exercise together, and using the passing-chord of the Fourth and Sixth:

I V VI II (VI) II V I

passing-chord of the Fourth and Sixth

The triad on degree VII, usually in the form of a sixth-chord, often occurs before the tonic triad with the significance of dominant harmony, as a substitute for the triad on degree V. This cadencing succession may be imitated so as to reach the triad of any desired degree through the triad on its own seventh degree.

I VII I II I II V I

According to the above, the signification and practical employment of the triads on the several degrees of the scale may be expressed as follows:

- | | |
|----------------------|--|
| Triad on degree I: | <i>Tonic</i> (as origin — as object — as end) <i>signification and employment.</i> |
| Triad on degree II: | <i>Subdominant</i> (as preparing the dominant; as a fifth degree leading into its I) <i>signification and employment.</i> |
| Triad on degree IV: | <i>Subdominant</i> (as preparing the dominant; like a seventh degree leading into its I — forming plagal connection with tonic) <i>signification and employment.</i> |
| Triad on degree V; | <i>Dominant</i> (as forming authentic connection with tonic) <i>signification and employment.</i> |
| Triad on degree VI: | Substitute for tonic signification and employment. |
| Triad on degree VII: | Weakened dominant signification and employment (as forming authentic connection with tonic). |

The triad on degree III is the only one having no direct cadence-connection either with the Tonic or the Dominant. Connecting it either

- (1) With degree VI, as if it were a fifth degree leading into its I; or
- (2) With degree IV, as if it were a seventh degree leading into its

I, we effect a cadence-connection in a derivative sense; and it is in such connections that the triad on degree III is, in fact, *almost exclusively* employed. For example:

(5th degree from A) or (7th degree from F)

C: I III VI C: I III IV

In duple time we find, as a rule:

(a) In two-chord cadences, the dominant (or subdominant) harmony on the *weak* beat, the closing tonic triad on the *strong* beat.

(b) In three-chord cadences, the subdominant harmony on the *strong* beat, the dominant harmony on the *weak* beat.

(c) In four-chord cadences, the $\frac{6}{4}$ chord (between subdominant and dominant harmony) *always* on the strong beat.

In triple time we find:

(a) In three-chord cadences, the subdominant harmony (sometimes) on the second beat, the dominant harmony on the third.

(b) In four-chord cadences, the $\frac{6}{4}$ chord (between subdominant and dominant harmony) sometimes on the second beat.

Harmonize each of the following soprano melodies in various ways.

(1)

(2)

(3)

(4)

(5) 

(6) 


(7) 

(8) 

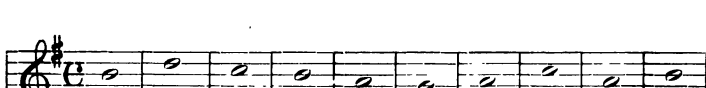
(9) 

(10) 

(11) 

(12) 

(13) 

(14) 

Model example:

G: I V I IV I II V I

G: I V I IV I II V I

G: I V I IV I II V I

G: I V VI IV I II V I

G: I VII^o I II I₇ II V I

(5th degree from A)

G: I V VI II (VI) II V I

These last exercises form a fitting introduction to the subject of

MODULATION

Modulation means, primarily, a change of key — any departure from the given (ruling) key. But gradually we have become accustomed to call a departure from the ruling key a *modulation* only when we remain for a time in the new key; while a transient departure from the ruling key, followed by a speedy return to it, is called a *transient modulation*, or, for short, a *transition*.

To make sure that our successions of chords are harmonically correct and logical, we require (*even within the limits of one key*, as shown in the preceding chapter) the support of a *cadencing interconnection* of the chords. Such support will be even more welcome in the case of harmonic successions which belong to different keys.

All cadence-formulas begin either with dominant harmony (that is, the chord on V or VII), or subdominant harmony (that is, the chord on IV or II). Now, in order to get a clear idea of the manner in which modulation from one key to another is effected, let us take up all the triads of some key one by one, and determine in what foreign keys they are to be found either as dominant or subdominant chords — that is, as triads on degree V or VII, or on degree IV or II.

Take the triad on degree I in *C* major, for example; it also occurs as the triad on degree V in *F* major (and *f* minor), and as the triad on degree IV in *G* major. Such being the case, we can form the following modulatory cadences:

(a) (b) (c)

{ C: I I { C: I I { C: I Iq V I
F: V I f: V I G: IV

This shows, that the modulatory cadence beginning with subdominant harmony (at c) makes us feel at home in the new key without further ceremony; whereas the other two, like all two-chord cadences, do not make us feel so entirely at home in the new key, but require confirmation in the shape of a repeated (and perhaps broader) cadence.

Confirmatory Cadence. do.

{ C: I I { C: I I { C: I Iq V I
F: V I II V I f: V I IV Iq V I

Similarly: Confirmatory Cadence.

a: I { II⁰ I IV Iq V I
C: vii⁰

EXERCISES

(1) By the aid of the following schedule:

$$\begin{array}{l}
 CI = FV \text{ or } fV \\
 = GIV \\
 CII = aIV
 \end{array}
 \parallel
 \begin{array}{l}
 CIII = DII \\
 = bIV \\
 CIV = B\flat V \text{ or } b\flat V
 \end{array}
 \parallel
 \begin{array}{l}
 CV = DIV \\
 Cvi = GII \\
 = eIV
 \end{array}
 \parallel
 C vii^0 = a II^0$$

write out all possible modulatory cadences starting on the seven triads of the key of *C* major. To each of the two-chord cadences, add a "confirmatory cadence" containing three or four chords. Let each exercise begin on the tonic triad of *C* major; distinctly mark the course of each modulation by means of figures and Roman numerals, employing a brace (as below) to mark the chord which forms the turning-point to the new key. For example: •

C III = *D* II *C* VI = *c* IV

C: I { III *D*: II I² V I *C*: I { VI *c*: IV I² V I

(2) Write out a similar schedule of all the triads in *a* minor, and work out all the modulatory cadences, in like manner.

(3) Write out all the closing cadences possible in any one key, and determine upon what degrees of foreign keys these cadences would begin. For example, the cadence-formula V-I in *G* major is like this:

To be reached
(1) from *D* I:

G: V I { *D*: I *G*: V I IV V I

Confirmatory Cadence.

(2) from
A IV

A: I { *G*: V IV I

(3) from \flat III

\flat : I { III I II V I

G : V

(4) from $f\sharp$ VI

$f\sharp$: I { VI I

G : V

etc.

The Cadence II-V-I is:

and is to be reached from

a : I
 F : III
 e : IV
 C : VI
 and so on.

II V I

Modulate from the triad of each degree into every key whose two-chord, three-chord or four-chord cadence the given triad can introduce; that is, into every key whose fifth, or seventh, or fourth, or second degree the given triad can be taken for. For example:

D : { I
 A : IV I_2 V I

$E\flat$: I { II
 c : IV I_2 V I

Confirmatory Cadence.

F: I { *m*
c: IV V I *c*: I { *VI*
D \flat : V I IV *I $\frac{1}{2}$* V I

PART II

CHORDS OF THE SEVENTH

FORM AND CHARACTERISTICS

Every chord of the seventh consists of a *Root* with its *Third*, its *Fifth*, and its *Seventh*.

Any tone of the scale may be taken as the root of such a chord of the seventh (seventh-chord); that is, a seventh-chord may be formed on any degree of the scale. If we erect a seventh-chord on each tone of the major scale, containing only tones proper to the scale, we shall obtain some seventh-chords having major Third, perfect Fifth, and major Seventh; others, having minor Third, perfect Fifth, and minor Seventh; one, having major Third, perfect Fifth, and minor Seventh; and one, having minor Third, diminished Fifth, and minor Seventh.

For the present, these differences in form will not be taken into consideration.

All forms of seventh-chords have one characteristic in common, namely, a feeling of dependence, a sense that they are not independent chords, complete in themselves, but chords requiring progression into other chords. Such progression is called *Resolution*. On hearing a major or minor triad, we may take it quite as reasonably for a final chord as for a commencing chord; on hearing a seventh-chord, the ear insistently expects further progression (resolution).

The resolution of any kind of seventh-chord is to be effected by leading its Seventh downward by a step.

Any tone, on becoming a Seventh — on entering into the relation, as Seventh, to some other tone as its root — loses thereby whatever characteristics it may have derived from its peculiar position as a member of the key, and takes on the characteristic of a Seventh, that is, the tendency to progress downward. (Cf. p. 20.)

In each key there are two chords of the seventh which contain, besides the Seventh, another *tendency-tone* — a tone whose progression

is decided in advance. These are the seventh-chords on degrees V and VII, both of which contain the seventh tone of the scale (one as Third, the other as root), this seventh tone thus retaining to the full its characteristic quality of leading-tone.

The progression of *these two seventh-chords* would therefore be effected by leading the *Seventh*, in either case, *downward*, while the *leading-tone* would be led *upward*.

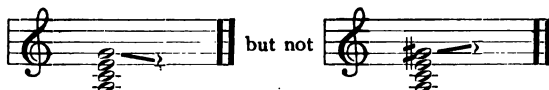
The seventh tone of the scale is also contained in the seventh-chords on degree I and degree III; e. g., in C major:



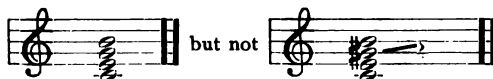
In the seventh-chord on I, the seventh scale-tone is likewise the Seventh of the chord. According to the general rule for the Seventh given above, this Seventh loses its characteristic leading-tone quality, and progresses *downward*.

Hence, it follows naturally, that in the seventh-chord on I *in minor*, too, the seventh scale-tone, losing its leading-tone quality by virtue of becoming a Seventh in that chord, must also lose its position as leading-tone, that is, it will not be raised.

Consequently, the seventh-chord on I (in *a* minor, for instance) will be



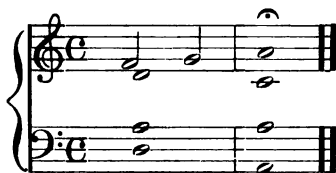
The seventh degree of the scale is also found in the seventh-chord on degree III, but here as a Fifth, and consequently without leading-tone quality (see page 20), and therefore *not raised* in minor. In *a* minor, for instance:



"As soon as we set out to construct a chain of chords according to the same principle, that is, as soon as we require that all consonant triads in the harmonic scheme shall be related to a given one among them (namely, the tonic triad) in the same manner as all tones of the scale are related to the tonic, the combination of the two requirements results in the formation of only two kinds of keys — two Modes — called the Major Mode and the Minor Mode.

"The Minor Mode is not so simple, clear, and readily apprehended, as the Major Mode; it originated from a compromise, so to speak, between the various requirements conditioned by the laws of tonality and the interconnection of the system of chords." [HELMHOLTZ: "Sensations of Tone."]

The transformations through which the Minor Mode passed during its development, all tended toward the establishment of as close an analogy as possible to the Major Mode. The leading-tone was introduced solely for the purpose of effectuating the authentic close. — In the plagal close the following form is still common, with upward progression:



The desired analogy is doubtless more consistently preserved when the double meaning of the seventh degree — now with, now without, leading-tone character — is transferred from the Major Mode to the Minor, than when its original import (which it has been deprived of only for certain special occasions, when raised by a semitone) is wholly lost sight of.

THE SEVENTH-CHORDS ON DEGREES V AND VII

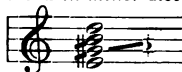
(Seventh-chords containing two tones with fixed resolutions)

(1) The seventh-chord on degree V; e. g., in *C* major:



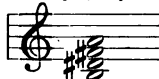
Its Third, *B*, requires, as leading-tone of the key, to be led upward to *C*.

As the seventh scale-tone, being the Third in the seventh-chord on degree V, really possesses the quality of leading-tone, it will naturally be raised *in minor also* in the seventh-chord on degree V; for instance, in *a* minor:



Hence, the seventh-chord on degree V, both in major and minor, *always* consists of the root, *major* Third, *perfect* Fifth, and *minor* Seventh. Now, as there is in every key only one seventh-chord having *major* Third, *perfect* Fifth, and *minor* Seventh, remember, that every seventh-chord having these intervals is a seventh-chord on the fifth degree, belonging to that key (major or minor) in which

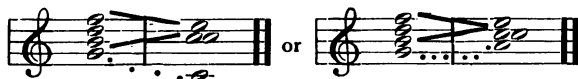
its root forms the fifth degree. For example:



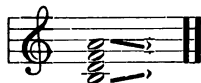
can be only the seventh-chord of the fifth degree in that key (major or minor) in which *B*, its root, is the fifth degree; that is, in *E* major or *e* minor.

The Seventh (*F*) must, as Seventh, be led downward to *E*.

The tones of resolution of leading-tone and Seventh being *C* and *E*, respectively, it follows that the seventh-chord *G-B-D-F* will resolve to a triad to which these two resolving-tones belong; that is, either to the triad on degree I (in which the said tones are root and Third), or to its substitute (see p. 48), the triad on VI (in which they are Third and Fifth).

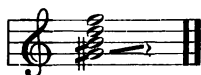


(2) The seventh-chord on degree VII; e.g., in *C* major:



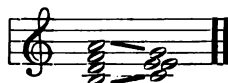
Its root, *B*, requires, as leading-tone of the key, to be led upward to *C*.

As the seventh scale-tone, being the root in the seventh-chord on degree VII, really possesses the quality of leading-tone, it will naturally be raised *in minor* also in the seventh-chord on degree VII; for instance, in *a* minor:



The Seventh (*A*) must, as Seventh, be led downward to *G*.

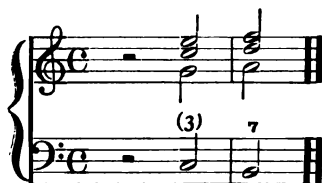
The tones of resolution of leading-tone and Seventh being *C* and *G*, respectively, it follows that the seventh-chord *B-D-F-A* will resolve to a triad to which these two tones of resolution belong; that is, to the triad on degree I, *C-E-G*, in which they are root and Fifth.



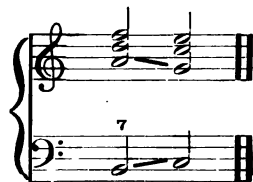
Exercise.



Solution. The triad on *C* is *C-E-G*; the soprano takes *E*, alto *C*, tenor *G*. The following seventh-chord, on *B*, is *B-D-F-A*. Common tones? None; therefore, contrary motion. The soprano goes from *E* to *F*, the alto from *C* to *D*, the tenor from *G* to *A*.



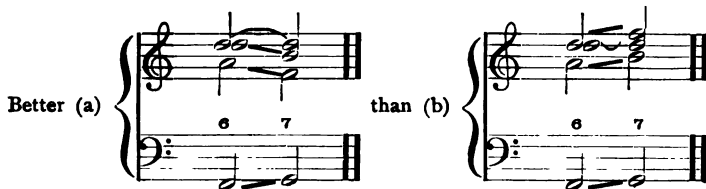
To resolve this seventh-chord on degree VII, the Seventh (*A*) is to be led downward (to *G*), and the leading-tone (*B*) upward (to *C*). Thus, for the following triad on *C*, besides the bass tone *C* (here the tone of resolution for the preceding leading-tone (*B*), the tone *G* is also determined in the tenor as the tone of resolution for the preceding Seventh, *A*. The soprano goes from *F* to *E*, the alto from *D* to *C*.



The following chord of the sixth (on *F*) is an inversion of the triad on *D* (*D-F-A*). Common tones? None; therefore, contrary motion. The tenor goes from *G* to *A*, the alto from *C* to *D*, the soprano (avoiding *F*, because it is the bass tone of the sixth-chord — Third in the root-position) to *D*.



The following seventh-chord (on *G*) is *G-B-D-F*. Common tones? *D*. So that we can lead the other parts in contrary motion to the bass, it will be better to hold *D* in the soprano than in the alto.



Besides, at (b) the root *G* and the Seventh *F* enter in similar motion.

The entrance of the root of a seventh-chord in similar motion with its Seventh should be avoided wherever possible.

The resolution of the seventh-chord *G-B-D-F* (degree V) is to be effected by leading the Seventh (*F*) downward to *E*, the leading-tone (*B*) upward to *C*. Thus, for the following triad on *A*, the tone *E* is already determined in the tenor (as tone of resolution of the preceding Seventh, *F*), and for the alto the tone *C* (tone of resolution of the preceding leading-tone *B*). The *D* in soprano can be led only to *C*; for it would progress in fifths with the bass, if led to *E*.

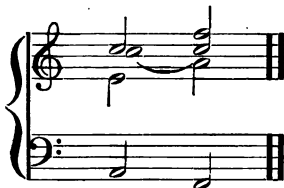


A doubling of the Third to afford a proper resolution to a leading-tone or Seventh, as here in the triad on *A*, has no unpleasant effect if the parts involved are led in contrary motion:



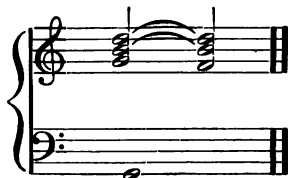
The necessity of leading a tendency-tone to its resolution is accepted by the ear as an all-sufficient excuse.

The next triad (on *F*) is *F-A-C*. Common tones? *C*. To secure contrary motion in the other parts, hold the common tone in the alto. The soprano goes from *C* to *F*, the tenor from *E* to *A*.

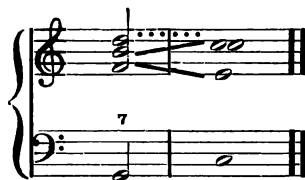


The next triad (on *G*) is *G-B-D*. Common tones? None. Therefore, contrary motion. The soprano goes from *F* to *D*, the alto from *C* to *B*, the tenor from *A* to *G*.

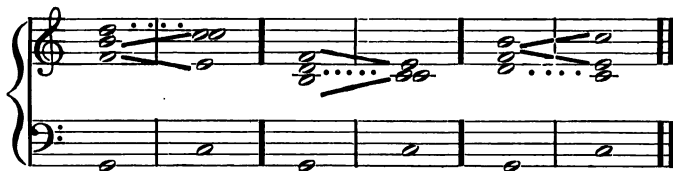
The following seventh-chord (on *G*) is *G-B-D-F*. Common tones? *B* and *D*. The tenor progresses to *F*.



To resolve the seventh-chord *G-B-D-F* (on degree V) the Seventh (*F*) is to be led downward (to *E*), the leading-tone (*B*) upward (to *C*). Thus, for the following triad on *C*, the tone *E* is already determined in the tenor (as tone of resolution of the preceding Seventh, *F*), and the tone *C* in the alto (as tone of resolution of the leading-tone, *B*). The soprano goes from *D* to *C*, this leading being preferable to the (here) unnecessary doubling of the Third, *E*.



The regular resolution of the seventh-chord on degree V to the triad on degree I, yields a triad minus its Fifth:

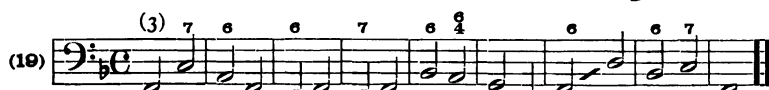
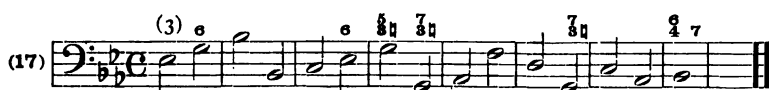
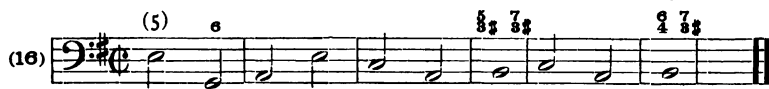
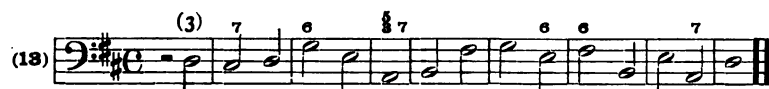
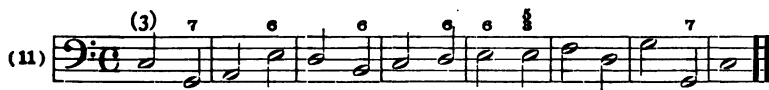
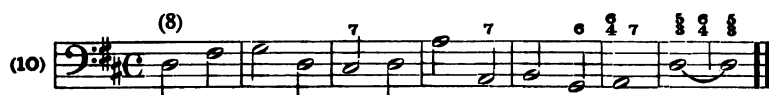


By omitting the Fifth of the seventh-chord on degree V, and doubling its root, the resulting regular resolution yields the full tonic triad, the tone doubling the root of the seventh-chord being held over as Fifth of the tonic triad. *E.g.*, in *C* major:



EXERCISES

- (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- (7)
- (8)
- (9)



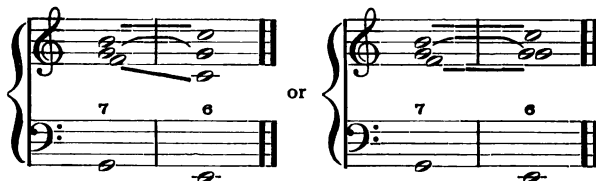
For example:



N. B. When some other part (especially soprano or bass) *progresses downward* to the tone of resolution proper to the Seventh, the Seventh itself, avoiding its tone of resolution, is to be led either upward (step-wise), or downward (by a leap). In this instance:



the bass progresses downward to the Seventh's tone of resolution; so the part having the Seventh will either leap downward to C, or go upward to G.



THE INVERSIONS OF THE SEVENTH-CHORD

The triad permits of two inversions, the bass tone being transferred from the root to the Third and Fifth, respectively; the seventh-chord has not only these two, but a third inversion in which the bass takes the Seventh of the chord.

Each of these three inversions of the seventh-chord is named according to the intervals formed with the new bass tone by the root and Seventh of the chord, which are its characteristic intervals. For example, the seventh-chord on V in C major has the following inversions:



First Inversion. The Third is taken as bass tone; above this new bass tone (*B*) the chord-seventh forms the interval of a Fifth, and the chord-root the interval of a Sixth; hence, this inversion is called a *chord of the Fifth and Sixth*, or five-six chord ($\frac{6}{5}$) for short.

Second Inversion. The Fifth is taken as bass tone; above this new bass tone (*D*) the chord-seventh forms the interval of a Third, the chord-root the interval of a Fourth; hence, this inversion is called a *chord of the Third and Fourth*, or three-four chord ($\frac{4}{3}$) for short.

Third Inversion. The Seventh (*F*) is taken as bass tone; it forms, with the chord-root, the interval of a Second; hence, this inversion is called a *chord of the Second*, or (sometimes) two-chord (2).

The Root-position itself is indicated by a 7, this figuring likewise showing the interval between the bass tone (now the root) and the Seventh.

Refer each inversion of a seventh-chord to the fundamental form from which it was derived (as we did before with the inversions of the triads); and always bear in mind that

Every $\frac{6}{5}$ chord is that inversion of a seventh-chord, in which the chord-third is taken as bass tone.

Every $\frac{4}{3}$ chord is that inversion of a seventh-chord, in which the chord-fifth is taken as bass tone.

Every 2-chord is that inversion of a seventh-chord, in which the chord-seventh is taken as bass tone.

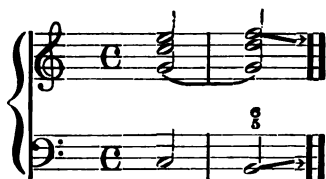
Wherever one of these three inversions occurs, ask yourself, "Of what tone is this given bass tone the Third (or Fifth, or Seventh, as the case may be)?" The answer will be, "It is the Third (or Fifth, or Seventh) of [say] *X*, or *Y*, or *Z*." Consequently, we shall have to do with an inversion of the seventh-chord on *X*, or *Y*, or *Z*.

Exercise.



Solution. The triad on *C* is *C-E-G*. The figure (3) shows that the soprano should take the Third; hence, soprano, *E*; alto, *C*; tenor, *G*.

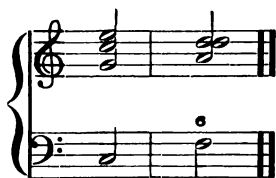
The following $\frac{6}{5}$ chord on *B* is an inversion of the seventh-chord on *G* (in which *B* is the Third), *G-B-D-F*. Common tones? *G*. *G* being already in the tenor, will be held in that part; the alto (*C*) goes to the nearest chord-tone, *D*; the soprano (*E*) to *F*; thus:



In the resolution of this five-six chord (seventh-chord in the first inversion) the Seventh (*F*) is to be led downward (to *E*), and the leading-tone (*B*) upward (to *C*). For the following triad (on *C*), besides the bass tone *C* (tone of resolution of the ascending leading-tone), the soprano tone *E* (resolution of the Seventh) and the tenor tone *G* (held over) are already determined; the alto goes from *D* to *C*.



The following sixth-chord on *F* is an inversion of the triad on *D*, *D-F-A*. The tenor goes from *G* to *A* (avoiding *F*, the bass tone of the sixth-chord); the alto to the nearest chord-tone, *D*; the soprano also to *D*; thus:



The following $\frac{4}{3}$ chord on *D* is an inversion of the seventh-chord (in which *D* is the Fifth) on *G*, *G-B-D-F*. Common tones? None. (That is, *D* being taken by the bass, it cannot be held as a common tone by either soprano or alto.) The tenor goes from *A* to *G*; the alto, from *D* to *B*; the soprano, from *D* to *F*.



To resolve this $\frac{4}{3}$ chord (seventh-chord in second inversion), lead the Seventh (*F*) downward (to *E*), the leading-tone (*B*) upward (to *C*). For the following triad (on *C*), the soprano *E* (resolution of the chord-seventh) and the alto *C* (resolution of the leading-tone) are already determined; *G* is to be held in the tenor; the bass goes to *C*.



The sixth-chord on *E*, and the following triad on *G*, will be written thus:



The following chord of the Second (on *F*) is an inversion of the seventh-chord (in which *F* is the Seventh) on *G*, *G-B-D-F*. Common tones? *G*, *B* and *D*.



To resolve this chord of the Second (seventh-chord in the third inversion), lead the Seventh (*F*) downward (to *E*), and the leading-tone (*B*) upward (to *C*). Therefore, for the following sixth-chord

(on *E*), besides the bass tone (here the tone of resolution of the preceding Seventh), the alto *C* (as tone of resolution of the preceding leading-tone) is already determined. Tenor *G* is held; the soprano *D*, avoiding *E* (bass tone of the sixth-chord), goes to *C*.

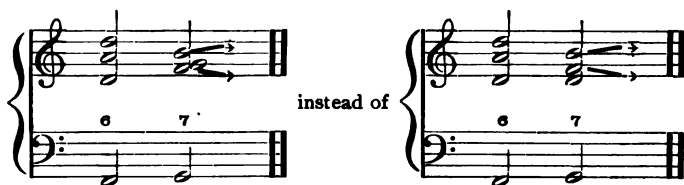


After connecting the triad on *A* and the sixth-chord on *F* with the preceding, as follows:



the seventh-chord on *G*, *G-B-D-F*, is to be formed.

By holding *D* in the tenor, and leading the alto *A* to *F*, and the soprano *D* to *B*, we obtain the seventh-chord on *G* — not, however, in such a shape that its resolution will yield a complete triad. So, in order to obtain such a resolution, let us drop the Fifth (*D*) of the seventh-chord and double its root (*G*), leading the soprano to *B*, as before, but the alto to *G*, and the tenor to *F*; thus:



To resolve this seventh-chord, lead the Seventh (*F*) downward (to *E*), the leading-tone (*B*) upward (to *C*). Hence, for the following triad on *C*, the tenor *E* (resolution of the chord-seventh, *F*) and the soprano *C* (resolution of the leading-tone), are already determined; *G* is held in the alto.

The complete exercise would, therefore, read thus:

EXERCISES

(1) (5) 7 8 2 3 4 5 6 7

(2) (8) 7 8 2 3 4 5 6 7

(3) (3) 8 2 3 4 5 6 7 (open harmony!)

(4) (3) 8 2 3 4 5 6 7

(5) (3) 8 2 3 4 5 6 7

(6) (3) 8 2 3 4 5 6 7

(7) (5) 7 8 2 3 4 5 6 7

(8)

(9)

(10)

N.B.

N. B. Here the tone of resolution of the Seventh is taken possession of by the bass in descending progression; so the Seventh must avoid it.

The Seventh may also avoid its tone of resolution when it is taken by another part in *ascending* progression; e.g.

But the leading of both parts to the same tone is entirely permissible in *contrary motion*, despite the doubling of the Third (see p. 26); and even *desirable*, when the Seventh is in one of the outer parts.

As the Seventh itself, renouncing its most essential characteristic, avoids its tone of resolution when this latter is taken by some other part in descending progression, it is still more important that, when the Seventh does take its tone of resolution, all the other parts should avoid that tone in downward progression. Therefore, on no account should we write like this:

THE SEVENTH-CHORD ON DEGREE V (DOMINANT SEVENTH-CHORD) IN THE CADENCE

By reason of its resolution to the tonic triad, the dominant seventh-chord is peculiarly adapted to form a closing cadence. So the cadence-formulas already given are now to be expanded by adding that, wherever the triad on degree V stood (notice that it was always called "*dominant chord*" or "*harmony*," not "*triad*," intimating the possibility of using the dominant seventh-chord), the seventh-chord on degree V may be taken instead.

The resolution of the dominant seventh-chord to the tonic triad (in which the tones of resolution for leading-tone and Seventh are, respectively, root and Third) occurs far more frequently than the resolution to the triad on VI (in which these tones of resolution are the Third and Fifth), and just because of its usefulness in forming the cadence. Still, it is best to consider these two resolutions as equally valid — unless one prefer to set up the second (quite superfluously) as an exception, an "*avoided*" or "*deceptive*" cadence. For the dominant seventh-chord is fully resolved when its two tendency-tones have taken their prescribed steps, the Seventh downward, the leading-tone upward.

The triad on V may be turned into a seventh-chord by adding the Seventh; but it is not allowable to reduce the seventh-chord to the triad:

The image shows two musical examples. On the left, a triad on degree V (F-A-C) resolves to the tonic triad (C-E-G). On the right, a dominant seventh chord on degree V (F-A-C-E) resolves to the tonic triad (C-E-G). The right-hand example is labeled "but not", indicating that reducing the seventh chord to a triad is not the correct resolution.

Exercise. Harmonize the following soprano, employing the dominant seventh-chord and its inversions.

A single-line musical notation in C major, showing the notes C, E, G, F, E, D, C.

Solution.

The solution shows the soprano line from the exercise harmonized with a piano accompaniment. The chords used are: C major (I), D minor (II), E major (V), C major (I), C major (I), D minor (II), E major (V7), and C major (I). The piano part uses various inversions of these chords, indicated by the numbers 6 and 7.

C: I II V I I II V⁷ I

The employment of the dominant seventh-chord in measure 2 (*F* being the Seventh of that chord) will not do, because it would require a reduction of the seventh-chord to the triad:

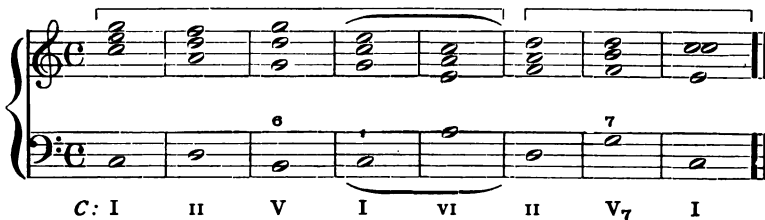


And a repetition of the seventh-chord in measure 3 is not to be allowed, because the tone of resolution of the Seventh *F* is anticipated in downward progression by the *E* in the given part, so that the Seventh would have to avoid it.



The possibility of the Seventh's avoiding its tone of resolution must not be made an excuse for employing a seventh-chord in places where the resolving-tone is already appropriated by the given part in downward progression. In such cases it is better, especially when the Seventh would be in an outer part, not to use a seventh-chord.

Instead of repeating the tonic triad in its first inversion (measures 4 and 5), we might take its substitute, the triad on *vi*:



Instead of the three-chord cadence *II-V₇-I* at the close we might, by *repeating* the dominant chord, use a two-chord form, *V-V₇-I*, but not the reverse, *V₇-V-I*.

but not

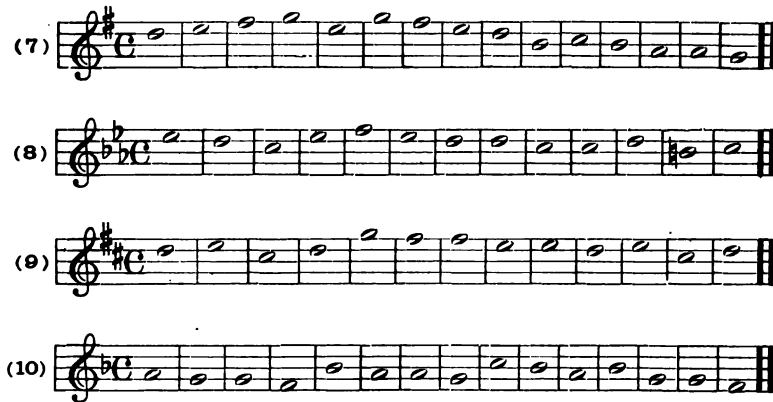
V V₇ I V₇ V I

N. B. The octave-leap in the bass (G) is desirable in order to avoid holding the bass over the measure, which would give a halting effect to the rhythm. This octave-leap amounts merely to a repetition of the bass tone, so that the leading of root and Seventh in similar motion

is unobjectionable in this case.

Exercise. Harmonize the following sopranos, employing the dominant seventh-chord and its inversions in suitable places.

(1) (2) (3) (4) (5) (6)



The seventh-chord on VII, as the resolving-tones of its root (the leading-tone) and Seventh lead respectively to the root and Fifth of the tonic triad, may be substituted for the dominant chord in the cadence; but its effect is not so decisively final as that of the dominant chord. Its inversions are rarely met with.

SEVENTH-CHORDS ON THE OTHER DEGREES

All seventh-chords other than those on degrees V and VII do not contain two tendency-tones (Seventh and leading-tone), but only one, the Seventh. And the resolution of all these seventh-chords is quite satisfactory when the Seventh goes down a step.

Consequently, they may be led (resolved) to any triad (or its inversion) or to any seventh-chord (or its inversion) containing the tone of resolution of the Seventh as a chord-tone.

That is, any seventh-chord not belonging to degree V or VII may be led (resolved) to

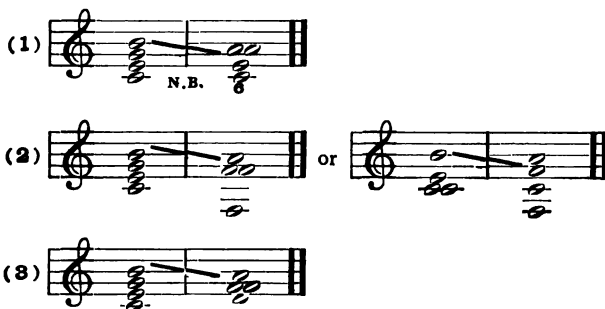
- (a) That *triad*, in which the tone of resolution of its Seventh is
 - (1) root,
 - (2) Third,
 - (3) Fifth;
- (b) That *seventh-chord*, in which the tone of resolution of its Seventh is
 - (1) root,
 - (2) Third,
 - (3) Fifth.

But no seventh-chord can be resolved to that seventh-chord in which the resolving-tone of its Seventh again forms the Seventh; because, in that case, root and Seventh of the second seventh-chord would have to enter in similar motion; for example:

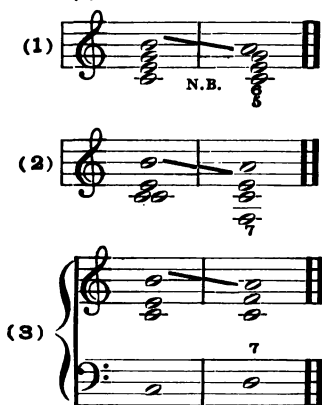


Taking the seventh-chord on degree I in C major, for instance, it may resolve to

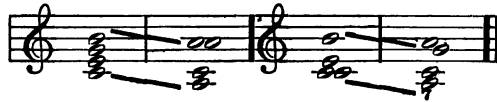
(a) The Triads:



(b) The Seventh-chords:



At the first N.B. only the first inversion of the triad, and at the second N.B. only the first inversion of the seventh-chord, can be employed, because, had the root-position been chosen, the resolving-tone of the bass would in both cases have to be led downward into the resolving-tone of the Seventh; thus:

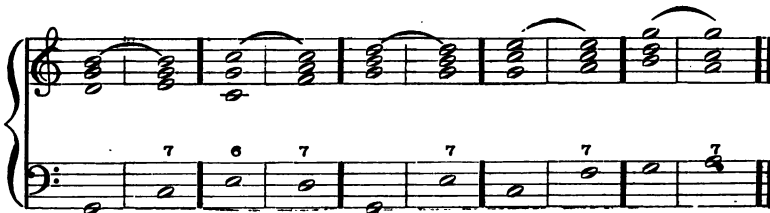


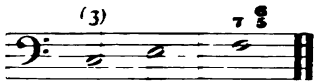
All the progressions which we have enumerated are equally good, and equally conformable to the character of the seventh-chord.

We lay special stress upon the *equal correctness* of all progressions of the seventh-chord in which the Seventh is led downward, and in which no fault can be found with the leading of the other parts, in order to oppose the notion that all seventh-chords have to progress according to a fixed formula, similar to that for the seventh-chord on degree V (compare pp. 55 and 56 regarding the cadencing interconnection of triads). This notion has become so well established, that we read of the "natural" resolution of these other seventh-chords to the triad whose root lies a Fourth higher or a Fifth lower than the root of the seventh-chord in question; whereas the facts do not justify us in speaking of the "natural" resolution to *any one special triad* of a chord for whose progression the leading of only one tone (the Seventh to its resolving-tone) is settled in advance.

PREPARATION OF THE SEVENTH IN ALL SEVENTH-CHORDS EXCEPT THOSE ON DEGREES V AND VII

The treatment of those seventh-chords which contain but one tendency-tone has been shown to be simpler than that of the seventh-chords on degrees V and VII, in which latter the leading of two such tones must be taken into account. On the other hand, the Seventh in these chords with one tendency-tone must be *prepared*. That is, the Seventh must be present in the preceding chord, and in the same part, as a chord-tone. For example:



Therefore, to the following bass:  etc.

the chord of the sixth on *E* cannot be set without doubling the bass tone:



for in this case the bass tone must be doubled to give the Seventh in the following seventh-chord the needful preparation:



The note preparing the Seventh must be of a length at least equal to the Seventh itself.



Preparation is required only for those dependent dissonant chords whose progression, when they are sounded, seems doubtful. When a seventh-chord on degree V or VII is sounded, its two tendency-tones (Seventh and leading-tone) show its probable progression (to triad on I or triad on VI) so clearly, that its entrance does not leave the hearer for a moment in doubt as to its further course, nor is its effect sudden or unpremeditated. The seventh-chords on the other degrees are different. They sound like dependent chords whose progression

is uncertain until actually accomplished; the resolving-tone of their single tendency-tone, the Seventh, may belong to any one of several different chords. This causes the surprising, unexpected effect of these chords when their entrance is not specially prepared.

The preparation of a dissonant chord may be omitted as soon as its progression has grown familiar to the hearer. Thus the preparation of the Seventh in the seventh-chord on degree π has gradually become superfluous, this chord having been employed again and again in the same typical connection (substitute for the subdominant chord) in the cadence (see p. 95). (For the present, however, the pupil should prepare it.)

It will also be noticed, that dissonant chords are carefully prepared on their *first* appearance in a composition, while their second or third occurrence (when they have been used thematically) is unprepared, because, once their effect and course have been noted, they no longer seem strange or harsh.

EXERCISE



Solution. The triad on F is $F-A-C$. The soprano takes A ; alto, F ; tenor, C . In the following sixth-chord on A (inversion of the preceding triad $F-A-C$), F , A and C are held in the same parts, in spite of doubling the bass tone A by the soprano, needed to prepare the Seventh (A) in the following seventh-chord $B\flat-D-F-A$.



The following seventh-chord on $B\flat$ is $B\flat-D-F-A$. The Seventh (A) is already prepared in soprano; the alto holds F ; the tenor C goes to D .



To resolve this seventh-chord, the Seventh (*A*) is to be led downward to *G*.

The following $\frac{6}{8}$ chord on *B \flat* is an inversion of the seventh-chord on *G*, *G-B \flat -D-F*. The Seventh, *F*, is prepared in the alto. For the $\frac{6}{8}$ chord on *B \flat* , therefore, soprano and alto are already determined; the soprano being the resolving-tone (*G*) of the preceding Seventh (*A*), and the alto being the Seventh (*F*), which can enter only in the part in which it is prepared. The tenor *D* is held.



The resolution of the Seventh (*F*) of the $\frac{6}{8}$ chord on *B \flat* (which is the seventh-chord on *G* in the first inversion) would be to *E*. But in the following seventh-chord on *G* the tone *E* is not present.

A little consideration will show that this is not a special case in which the regular resolution of the Seventh is exceptionally prevented, but merely a repetition of the same seventh-chord, in root-position, which we have just sounded in the first inversion. So the Seventh (*F*) is held in the alto, the tenor *D* is also held, and the soprano goes from *G* to *B \flat* .



And now the seventh-chord on *G*, *G-B \flat -D-F*, will be resolved by leading the Seventh (*F*) down (to *E*). The following seventh-chord on *C* is *C-E-G-B \flat* . Being the seventh-chord on degree V, its Seventh (*B \flat*) requires no preparation; however, as it is already present in the soprano of the preceding chord, it would be quite improper to give it to some other part just to show that, as dominant Seventh, it can enter free and unprepared.

For our next seventh-chord on *C*, *C-E-G-B♭*, therefore, alto and soprano are determined; the alto (*E*) being the resolving-tone of the preceding Seventh (*F*), and the soprano holding the tone (*B♭*) common to both chords. The tenor goes from *D* to *C*.



To resolve the seventh-chord *C-E-G-B♭* on degree V (*C*), the Seventh (*B♭*) is to be led down (to *A*), and the leading-tone (*E*) up (to *F*). The tenor holds *C*.



The following sixth-chord (on *A*) is an inversion of the preceding triad (on *F*) *F-A-C*. Tenor *C* and alto *F* are held; the soprano (avoiding *A*, the bass tone of the sixth-chord) goes to *C* rather than *F*, the former leading giving the soprano more variety.



The following seventh-chord on *D* is *D-F-A-C*.

Any seventh-chord, excepting that on degree VII, may be written in two ways in the root-position; (1) with all its intervals, or (2) omitting the Fifth and doubling the root (see p. 66). The root of the seventh-chord on degree VII cannot be doubled, because it is the leading-tone. (See p. 21.)

When several seventh-chords in root-position follow each other, the above two ways of writing them will alternate naturally.

In our present example the seventh (C) is prepared in both soprano and tenor. We shall choose the preparation in soprano, so as to lead the other parts in contrary motion. *F* is held in the alto; the tenor goes from *C* to *D*, doubling the root.



To resolve the seventh-chord on *D*, *D-F-(A)-C*, the Seventh (*C*) is to be led downward (to *Bb*).

The following seventh-chord on *G* is *G-Bb-D-F*. The Seventh, *F*, is prepared in the alto. For this seventh-chord, *G-Bb-D-F*, the soprano and alto are therefore determined; the soprano being the resolving-tone (*Bb*) of the preceding Seventh (*C*), and the alto having the Seventh (*F*), which can enter only in the same part in which it is prepared. The tenor holds *D*.



To resolve this seventh-chord, the Seventh (*F*) should be led downward (to *E*); but as the bass takes the resolving-tone (*E*) of the Seventh, the latter must avoid it, going either to *G* or *C*. The soprano holds the common tone *Bb* (although the Seventh, *Bb*, requires no preparation in the inversion of the dominant seventh-chord); the tenor goes to *C*.



To resolve this dominant seventh-chord in the second inversion, the Seventh ($B\flat$) must be led downward (to A), and the leading-tone (E) upward (to F). The alto G goes to F ; the tenor holds C .



The following $\frac{6}{8}$ chord on $B\flat$ is an inversion of the seventh-chord on G , $G-B\flat-D-F$. The Seventh (F) is prepared in the alto; the soprano goes from A to G , the tenor from C to D .



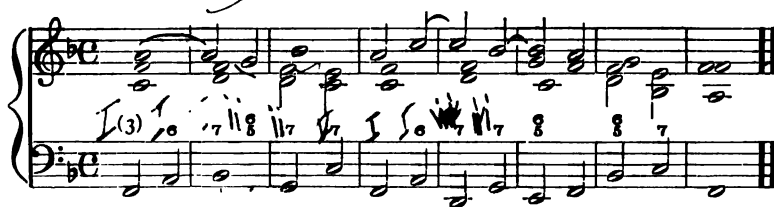
To resolve this seventh-chord in the first inversion, the Seventh (F) is to be led downward (to E); the soprano G is held; the tenor D goes to $B\flat$ (the Seventh of the following dominant seventh-chord, which requires no preparation).



To resolve this seventh-chord on degree V, the Seventh ($B\flat$) is to be led downward (to A), and the leading-tone (E) upward (to F). The soprano goes from G to F .



The complete exercise reads thus:



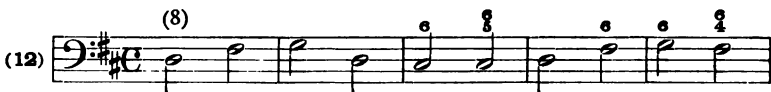
EXERCISES

- (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- (7)
- (8)

(9) 

(10) 

(11) 

(12) 

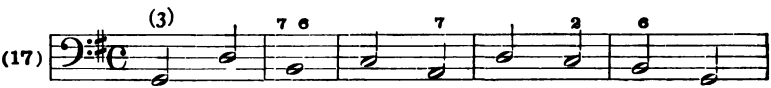


(13) 

(14) 

(15) 

(16) 

(17) 



(18) 

(19) 

(20) 

At N.B., the Seventh of the required seventh-chord is not found as a chord-tone in the preceding chord; hence, the Seventh cannot be prepared. But it is considered a sufficient preparation if all the other intervals of the required seventh-chord are present in the preceding chord, and the Seventh itself enters stepwise from the octave; for example:



The harmonic disposition of a tone is *not to be found in the tone taken by itself*, but always *in its relation to some other tone or tones*.

For instance, the tone *B*, occurring in *C* major in the seventh-chord on degree I as Seventh to *C*, acquires the character of a Seventh, that is, the tendency to progress downward. But in case some other tone becomes the root of *B* before it can fulfil its tendency as a Seventh, *B* will lose its characteristic tendency as a Seventh before it had time to follow it. Thus, in the following example,



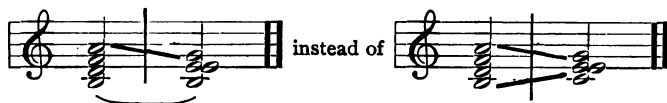
B is a Seventh in the first half of the measure; but in the second half it becomes, before it could follow its tendency as Seventh and progress downward, the root of the triad on degree VII (in the first inversion).

Any Seventh can, in like manner, lose its tendency as a Seventh before it can follow it, if it gets another root before its resolution as a Seventh takes place. This is the case in the above examples, and in all similar ones; *e.g.*,



so it must not be thought that the seventh-chord in question *progresses exceptionally without leading the Seventh downward*, but that the Seventh itself has ceased to be a Seventh by getting a new root.

Similarly, the progression of the seventh-chord on degree VII, for instance, like this:



must not be interpreted as an abnormal leading of the leading-tone; before it could follow its natural upward tendency, it became the Fifth of the triad on degree III (as a $\frac{6}{4}$ chord), thus losing its characteristic tendency as leading-tone, and requiring no resolution upward. And in the following example:

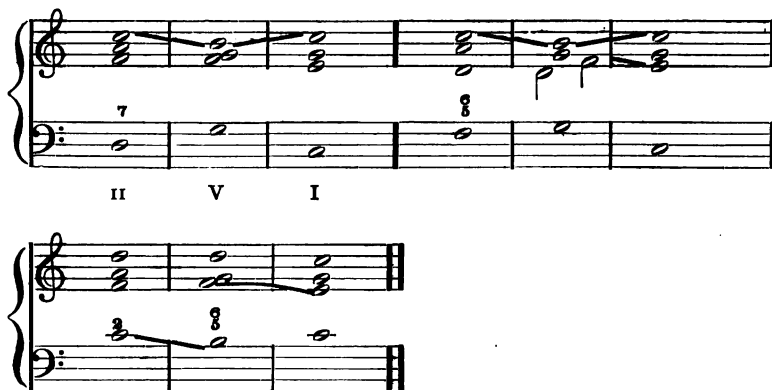


the tone *B*, at first the root of the seventh-chord on degree VII, becomes the Third of the seventh-chord on degree V by the progression of *A* to *G*; thus remaining the leading-tone, with its resolution merely put off.

THE SEVENTH-CHORD ON DEGREE II IN THE CADENCE

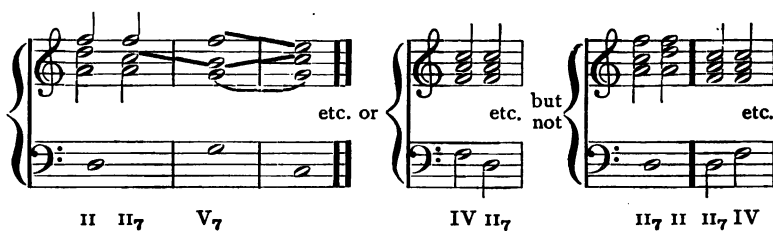
The seventh-chord on degree II, by reason of its resolution to a triad or seventh-chord in which the resolving-tone of its Seventh is contained as degree VII of the scale, is a good chord to precede the domi-

nant triad or seventh-chord; hence, it frequently is employed in the cadence, *in subdominant significance* — as a substitute for the subdominant chord (II, -V₇ -I). For example, in C major:



The cadence-formulas given before are therefore to be expanded by adding, that wherever the triad on degree IV or degree II occurred, the seventh-chord on degree II may be substituted (even without preparation of the Seventh; see p. 85).

Where the subdominant chord is repeated, the triad on degree II may be amplified to the seventh-chord on that degree; but the seventh-chord must not be reduced to the triad; and the triad on degree IV may be amplified to the seventh-chord on degree II (by adding the root of the latter), but not the reverse. For instance, we may write



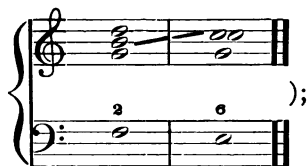
Similarly, where the subdominant chord is repeated, the triad on degree IV may be followed by that on degree II; but not the reverse. For example:

The first example shows a correct cadence: IV (F4, A4, C5) → II (B3, D4, F4) → I₂ (B3, D4, F4) → V₇ (G3, B3, D4, F4). The second example shows an incorrect cadence: II (B3, D4, F4) → IV (F4, A4, C5) → I₂ (B3, D4, F4) → V₇ (G3, B3, D4, F4). The text "etc., but not:" is placed between the two examples.

Exercise. Harmonize the following sopranos, using the seventh-chord on degree II and its inversions.

- (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- (7)
- (8)
- (9)

For the root-position of any seventh-chord its first inversion ($\frac{6}{5}$) may be employed as a complete substitute; and also its chord of the second (except in a close, where the sixth-chord to which it resolves would not be suitable:

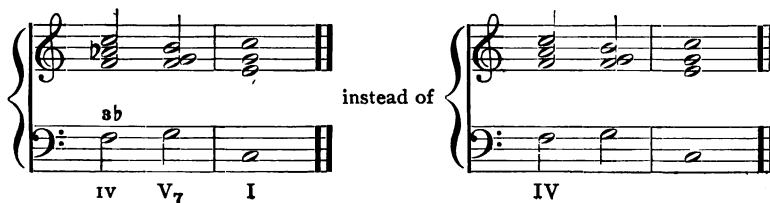


but its second inversion ($\frac{4}{3}$) cannot be accepted here unconditionally. The second inversion has an unpleasing effect, unless it is the inversion of a dominant seventh-chord. Try on the piano



The Fifth, entering free in the bass, has an obtrusive effect, as if the bass had something very particular to say — *quasi solo*.

As a substitute for any subdominant harmony of a *major* key (the triads on IV and II, the seventh-chord on II) the same chord in *minor* may be employed. For example, in *C* major:



The first example shows a progression in B-flat major: II (F-A-C), V₇ (B-flat-D-F-A), and I (B-flat-D-F). This is replaced by a progression in B-flat minor: II₇ (F-A-C-B-flat), V₇ (B-flat-D-F-A), and I (B-flat-D-F). The second example shows a progression in B-flat major: II (F-A-C), V₇ (B-flat-D-F-A), and I (B-flat-D-F). This is replaced by a progression in B-flat minor: II₇ (F-A-C-B-flat), V₇ (B-flat-D-F-A), and I (B-flat-D-F).

Why this substitution is possible, may be explained as follows: From the custom of finishing the *minor* cadence of a *minor* piece with the *major* tonic triad (the minor tonic triad being considered too weak for a full close), the combination of minor cadence with major closing triad has grown to be so familiar and generally accepted, that now we can even interpolate, as a matter of course, a *minor* cadence preceding the *major* close of a *major* piece.

The first example shows a progression in C major: II (D-F-A), V₇ (G-B-D-F), and I (C-E-G). This is replaced by a progression in C minor: II (D-F-A-B-flat), V₇ (G-B-D-F), and I (C-E-G). The second example shows a progression in C major: II (D-F-A), V₇ (G-B-D-F), and I (C-E-G). This is replaced by a progression in C minor: II (D-F-A-B-flat), V₇ (G-B-D-F), and I (C-E-G).

USE OF THE DOMINANT SEVENTH-CHORD IN MODULATION

The major triad with minor Seventh can occur only on degree V of any key. (This statement does not provide for certain altered chord-forms, to be considered later). This unequivocal character of the dominant seventh-chord renders it peculiarly apt for use in modulation; its entrance establishes the new key — one might say, guarantees it.

The natural connection between a triad of the "old" key and the dominant seventh-chord of the "new" key (*i. e.*, with the two-chord authentic cadence) is found in the tones common to both.

Such a direct connection of the tonic triad of the old key and the two-chord authentic cadence of the new key by means of common tones, is entirely correct, and fully satisfies our modern sense of harmony, even in cases where the two keys thus connected are quite unrelated to each other. Our earlier exercises in modulation have shown us, however, that the two-chord cadence to the new key is not the same thing as a longer continuance in the latter. Therefore, it is a good plan to more firmly establish the sense of "arrival," the "at home" feeling, by the further addition of a more extended, three- or four-chord, cadence. To this end, do not always resolve the dominant seventh-chord to the root-position of the tonic triad, but to the tonic sixth-chord or to the triad on degree vi.

Exercise. Starting with the tonic triad of *C* major, modulate into every major key whose two-chord authentic cadence may be directly reached from that triad; that is, every major key whose dominant seventh-chord contains either of the tones *C*, *E*, or *G*, as root, Third, Fifth, or Seventh;—and add in each case a three- or four-chord cadence.

Solution. (1) The tone *C* (considered as a common tone used as a connecting-link) is

- | | | | |
|-----|------------------------------------|------------------------------------|---|
| (a) | Root of the dominant seventh-chord | <i>C-E-G-B\flat</i> , | key of <i>F</i> major |
| (b) | Third | " | " <i>A\flat-C-E\flat-G\flat</i> " <i>D\flat</i> " |
| (c) | Fifth | " | " <i>F-A-C-E\flat</i> " <i>B\flat</i> " |
| (d) | Seventh | " | " <i>D-F\sharp-A-C</i> " <i>G</i> " |

(a)

C: I *F*: V₇ I VI II₇ V₇ I

(b)

C: I *D \flat* : V₇ VI IV I $\frac{3}{4}$ V₇ I

(c)

C: I $B\flat$: V_7 VI IV $I\frac{1}{2}$ V_7 I

(d)

C: I G: V_7 I VI II_7 V I

(2) The tone *E* (considered as a common tone used as a connecting-link) is

(a) Root of the dominant seventh-chord *E-G#-B-D*, key of *A* major

(b) Third " " " *C-E-G-B \flat* " *F* "

(see 1a)

(c) Fifth " " " *A-C#-E-G* " *D* "

(d) Seventh " " " *F#-A#-C#-E* " *B* "

(a)

C: I A: V_7 I IV $I\frac{1}{2}$ V_7 I

(b)

C: I F: V_7 I VI II_7 V_7 I

(c)

C: I D: V₇ VI IV I₄ V₇ I

(d)

C: I B: V₇ I VI II V₇ I

(3) The tone *G* (considered as a common tone used as a connecting-link) is

(a) Root of the dominant seventh-chord *G-B-D-F*, key of *C* major

(b) Third " " " *E_b-G-B_b-D_b* " *A_b* "

(c) Fifth " " " *C-E-G-B_b* " *F* "

(d) Seventh " " " *A-C[#]-E-G* " *D* "

Modulations *c* and *d* have already been carried out with the aid of the similarly common tones *C* and *E*, and *E*. And the connection *a* with the dominant seventh-chord *G-B-D-F* would effect no modulation, but simply remain in the same key.

(b)

C: I A_b: V₇ I IV I₄ V₇ I

Exercises. (1) Modulate, according to the given formula, and starting with the tonic triad of various keys, to any other key whose two-chord authentic cadence may be reached by the use of common tones; always adding a further three- or four-chord cadence.

- (2) Modulate from the sub-dominant chord, starting
 (a) With the triad on degree IV } of the old key, into every key
 (b) With the triad on degree II }
 whose dominant seventh-chord may be reached through common
 tones; adding in each case a further three- or four-chord cadence.
 For example:

C: I IV D: V₇ I VI II₇ V₇ I

C: I IV B^b: V₇ I VI II₇ V₇ I

C: I IV G: V₇ VI II₇ V₇ I

C: I IV E: V₇ I VI II₇ V₇ I etc.

(3) Review the method of modulation by means of common chords, explained on p. 55, varying the exercises by the employment, in particular, of the seventh-chord on degree II and the dominant seventh-chord. For example:

or:

C: I { vi_{17} V_7 I } C: I { V III_{17} IV_7 I_2 V I }

(4) Combine both methods of modulation; for example:

C: I $\text{Ab}:$ V_7 { $\text{Eb}:$ IV I_2 V_7 I }

or as below:

Confirmatory Cadence

C: I { $\text{D}:$ II V_7 I $\text{D}:$ V I V I } (or C^\sharp)

Confirmatory Cadence

$$D:\left\{\begin{array}{l} \text{I} \\ g:\text{V} \end{array}\right. \quad -7 \quad \left\{\begin{array}{l} \text{I} \\ F:\text{H}-7 \end{array}\right. \quad \text{V} \longrightarrow 7 \quad \text{I } G^b:\text{V}_7 \quad \text{I etc.}$$

The musical score for 'The Rose Tree' is presented in two systems. The first system consists of a treble clef staff with a key signature of one sharp (F#) and a common time signature (C). The melody is written in a simple, folk-like style. The second system consists of a bass clef staff with a key signature of one sharp (F#) and a common time signature (C). The bass line is written in a simple, folk-like style. The score is for a single melodic line, likely for a voice or a simple instrument like a flute or violin.

$C: I \quad b: V_7 \left\{ \begin{array}{l} I \\ A: II \end{array} \right. \quad 16_4 \quad V_7 \quad I$

(5) Apply what has been learned to the

HARMONIZATION OF CHORALES

For example:

(1) Ach bleib mit deiner Gnade.

(7) *Nun bleib mit demselben Schade.*

The musical score is for a piano accompaniment. It features two staves, treble and bass, with a grand staff bracket on the left. The key signature is one flat (B-flat major or D minor). The melody is primarily in the right hand, with some chords and single notes in the left hand. The piece concludes with a final cadence. Below the staves, the harmonic progression is indicated by Roman numerals.

F: I— V I IV V— I IV I II, I² V I I—

$F: I - \quad V \quad I \quad IV \quad V - \quad I \quad IV \quad I \quad II_7 \quad I_2 \quad V \quad I \quad I -$

another way:

VI d: VII⁹ { C: II I II₇ V₇ { F: V I V₇

IV VII⁰ I III { VI₇ { F: V I VII⁰ I II₇ V₇ I

C: II₇ V₇ { I

(2) Allein Gott in der Höh' sei Ehr'.

G: I I-₇ IV V II VII⁰ I V I -₇

VI II — V₇ VI V-₇ I I-₇ VI-₇ IV I IV

1 4 V I VI I V II— 1 4 V₇ I I

V a : vii^o I ii^o 1 4 V { G : II V I IV V { II
c : IV

I IV₇ II₇ V { G : VI I V II V₇ VI V₇ I
I

(3) Jesu, geh voran.

Ad: I - V₇ I V VI V I V₇ I I IV I IV

I V I - V VI V I V₇ VI f: V I -

V A♭: V₇ I - V₇ I V VI V I V-₇ I

(4) Nun ruhen alle Wälder.

G♭: I IV VII^o I V IV V₇ I

V₇ A♭: V { D♭: II I V₇ I G♭: V₇ VI V I - V A♭: V

I G♭: V I — IV V₇ I I V I { D♭: II V

{ D♭: II V₇ I } G♭: V₇ I VII^o I IV I₂ V₇ I

Harmonize the following chorales both in close and open harmony.

(1) Nun danket alle Gott.

(2) Was Gott tut, das ist wohlgetan.



(3) Vom Himmel hoch, da komm' ich her.



(4) Lobe den Herren.



Do not neglect to play the written exercises over on the piano.
Wherever, in the course of a piece,

- (a) *A chord-tone is to be followed by its chromatic alteration (as a chord-tone), or*
- (b) *A chromatically altered chord-tone is to be followed by its resolution (as a chord-tone),*

the following tone must, in either case, be *in the same part*; otherwise the *inharmonic (cross) relation*, a most unpleasant tone-effect, would result.

For example:

(a)
not

7 8# etc., but so

7 8# etc.

(b)
not

7 8# etc., but so

7 8# etc.

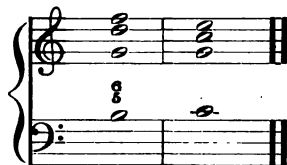
PART III

ORNAMENTAL CHANGES IN THE CONNECTION
OF CHORDS

1. THE SUSPENSION

The suspension is an ornamental delay, by one part, in the progression of one chord to another. This part, instead of progressing simultaneously with the rest to its tone in the new chord, delays upon (holds) its chord-tone in the first chord (provided that this tone is the higher or lower neighbor of the new chord-tone), before proceeding to its tone in the second chord.

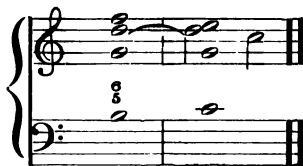
For example, in the progression of the $\frac{6}{5}$ chord on *B* to the triad on *C*, instead of all the parts moving on together



a suspension may be effected in the soprano by holding back its chord-tone *F* (in the $\frac{6}{5}$ chord), and leading it later to the neighboring *E*:



or the *D* in the alto may be suspended from the $\frac{6}{5}$ chord, and led later to the neighboring *C*:



Such a suspension may be employed before

the root the Third the Fifth	$\left. \begin{array}{c} \\ \\ \end{array} \right\}$	of any triad or seventh-chord	$\left. \begin{array}{c} \\ \\ \end{array} \right\}$	whether the chord be in root-position or in any inversion.
------------------------------------	--	----------------------------------	--	--

A suspension of this kind, in a single part, *should not be regarded as forming a new chord*. The interval which the suspended tone forms with the bass tone is a wholly accidental one, for it has no harmonic relation to the chord. The marking of this accidental interval by a numeral, together with the intervals of the other tones (which are chord-tones), would give rise to the wrong notion that the suspended tone was part of the harmony.

For example, the figuring



makes it look as if $\frac{5}{4}$ represented a new chord-form. In fact, this way of figuring has actually led a theorist to speak of a "chord of the Fourth and Fifth." [Richard Wüerst, "Elementartheorie der Musik;" Berlin, Bote & Bock, 1867.]

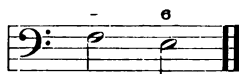
On the other hand, the figuring



leaves no room for doubt that the chord-form in question is simply the triad $\frac{5}{3}$ on C, in which a single part suspends its preceding chord-tone (which happens to be a Fourth above the bass tone, C) before the Third of the triad.

This latter way of figuring is preferable, if only for the simple reason that it avoids a whole series of strange figurings like $\frac{7}{3}, \frac{9}{6}, \frac{7}{4}, \frac{7}{3}$, etc., which would merely be confusing.

It is evident that these strange figurings are apt to confuse, from the circumstance, that they do not in every case mean the same thing. For instance, $\overset{7}{4}$ may signify either a suspension before the Third of the seventh-chord, or a suspension before the Sixth of the $\overset{6}{4}$ chord; whereas $\overset{7}{4}$ or $\overset{7}{3}$ are perfectly clear. Similarly, $\overset{5}{2}$ may signify either a suspension before the Fourth in a chord of the second, or a suspension before the bass tone of a sixth-chord; whereas $\overset{5}{2}$ or $\overset{6}{4}$ have only one meaning. Again, the figuring $\overset{6}{5}$ might make one suppose that a complete chord of the Fifth and Sixth is wanted, when only a suspension before the Fourth of a $\overset{6}{4}$ chord is required, which is more clearly expressed by $\overset{6}{5} \overset{6}{4}$ than by $\overset{6}{5} \overset{6}{4}$. Where the suspension is in the bass, the figuring



is consistently employed; on comparing it with figurings already employed in like manner, its meaning becomes plain.

From the definition of the suspension the following self-evident rules are derived:

(1) Delay by suspension can be effected only in and by that part, in which the tone to be suspended occurred (was prepared); *e.g.*,

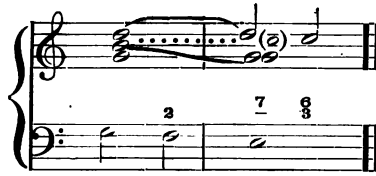


(2) The suspended tone progresses to its neighboring tone, either above or below, *stepwise*.

Notice, besides, that

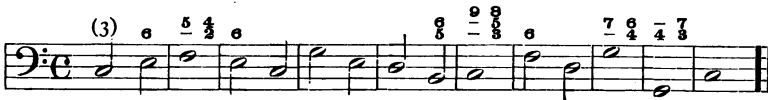
- (a) The suspension always enters on the strong beat.
- (b) The tone preparing the suspension must be at least as long as the suspended tone itself.
- (c) The resolving-tone of the suspension must not sound, together with the suspension, in any other part but the bass.

In the following example, for instance,



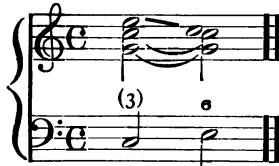
the leading-tone *B*, in the dominant seventh-chord *G-B-D-F*, must avoid its natural resolving-tone, *C*, and progress downward, so as not to sound together with the soprano *D* suspended before *C*, the resolving-tone of the suspension.

EXERCISE*



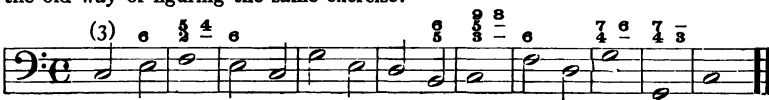
Solution. The triad on *C* is *C-E-G*; soprano (3) *E*, alto *C*, tenor *G*.

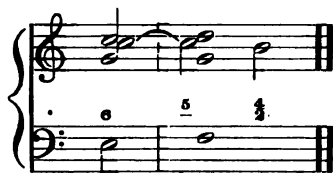
The following sixth-chord (on *E*) is an inversion of the preceding triad (on *C*). *G* remains in the tenor, *C* in the alto; the soprano (avoiding *E*, the bass tone of the chord) goes to *C*.



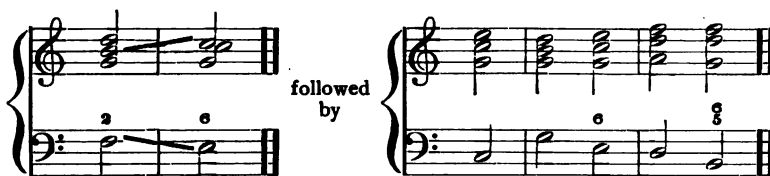
The following chord of the second (on *F*) is an inversion of the seventh-chord (on *G*) *G-B-D-F*. Common tones? *G*; remains in the tenor. The soprano goes from *C* to *D*. The alto would go from *C* to *B*, only the entrance of the Fourth of *F* is (as the figuring $\frac{5}{2}$ shows) to be delayed by suspension. Consequently, the alto holds its preceding chord-tone *C* (here a Fifth above *F*), and proceeds on the second beat to its chord-tone *B*.

* Read off the successive chords in this exercise from the figuring, all of which represents familiar chord-forms:— $\frac{4}{2}$, $\frac{5}{2}$, $\frac{5}{3}$, $\frac{6}{3}$, $\frac{4}{2}$, $\frac{7}{3}$,—and then compare with the old way of figuring the same exercise:

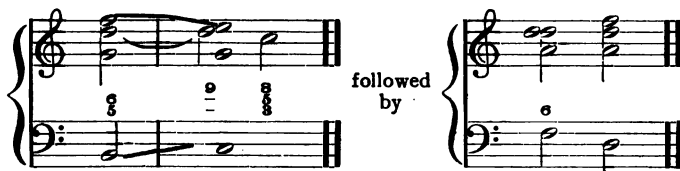




To resolve this dominant seventh-chord in the third inversion, the Seventh (*F*) is led downward (to *E*), the leading-tone (*B*) upward (to *C*). The tenor holds *G*; the soprano goes from *D* to *C*.



To resolve this $\frac{6}{5}$ chord (first inversion of the dominant seventh-chord *G-B-D-F*), the Seventh (*F*) goes downward (to *E*), the leading-tone (*B*) upward (to *C*). The tenor holds *G*. The alto, after suspending its preceding chord-tone *D* (a Ninth above *C*), progresses to *C*.



The following $\frac{6}{4}$ chord (on *G*) is an inversion of the triad (on *C*) *C-E-G*.

Contrary motion; the tenor goes from *A* to *G*, the alto from *D* to *C*. After suspending its preceding chord-tone *F* (a Seventh above *G*), the soprano goes to *E*.



The following seventh-chord (on *G*) is *G-B-D-F*. Common tones? *G* (the root, doubled); is held in the tenor; the soprano goes from *E* to *F*; after suspending its preceding chord-tone *C* (a Fourth above *G*), the alto progresses to *B*.

or with the Fifth

The entire exercise reads:

(3)

(8)

(1)

(3)

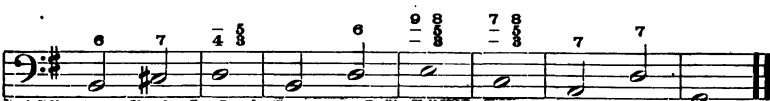
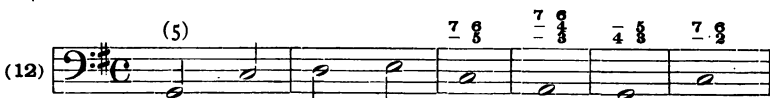
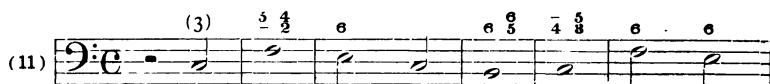
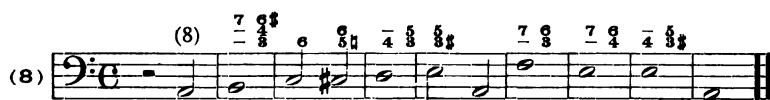
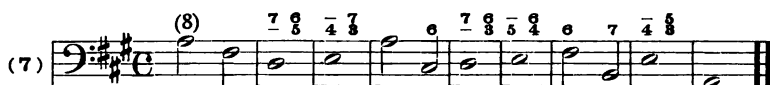
(2)

(5)

(3)

(8)

(4)



(13)

(14)

(15)

(16)

(17)

(18)

(19)

(20)



The suspension makes the interconnection of two successive chords more intimate; one part, by holding its tone over into the second chord—although without harmonic relation to the latter, merely by the sense of neighborhood to one of its chord-tones—creates artificially, as it were, a tone common to both chords.

The importance of common tones as connecting-links has often been emphasized in the foregoing. Here we again call special attention to it.

Progress cannot be made in the analysis of modern music by trying to discover or devise new and complicated relationships of any sort to explain bold progressions of chords having very remote harmonic relations, or none at all. By doing so, we should overshoot the mark, and so miss our object—the attainment of clear understanding. The fact is, that the freer and bolder treatment of harmonic successions in modern music is based on our increased capability of apprehending a logical connection between the remotest harmonies, where a single common tone bridges the gulf, providing this connection assumes the form of a cadence.?

By means of the “artificially created” common tone, we can frequently employ

THE SUSPENSION AS A MEANS OF MODULATION

Whenever it happens that the “old” key has no tone in common with the dominant seventh-chord of the “new” key, a neighboring tone to some tone in this dominant seventh-chord may be suspended before it, and a bridge thus provided.

C: I E:— V₇ I IV — V₇ I

C: I E♭:— V₇ I IV — V₇ I

EXERCISE

(1) Modulate by means of suspensions to those keys whose dominant seventh-chords have no tone in common with the tonic triad of the given key, from which latter the two-chord cadence of the new key is to be reached.

(2) Taking modulations already effected, make the connection between triad of the given key and dominant seventh-chord of the new key still more intimate by introducing a suspension.

C: I G: V₇ by suspending
G before F[#] C: I G:— V₇

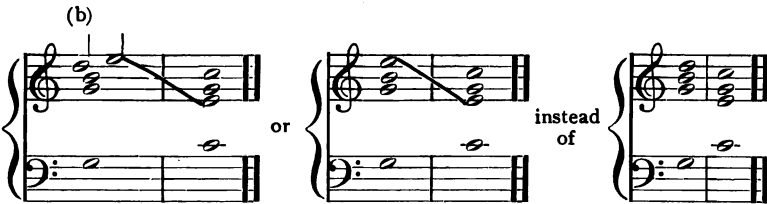
2. THE ANTICIPATION

Anticipation is the advancing of one part in a harmony before the rest (a) to its chord-tone in the next chord, or (b) to any other chord-tone in the next chord.

For instance, in the first example below, the soprano anticipates its own following chord-tone *E*:

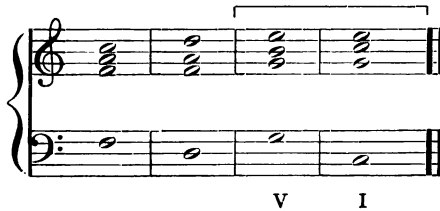


And in the following example, the soprano anticipates the *E* belonging to the following chord, although it is the tenor note:

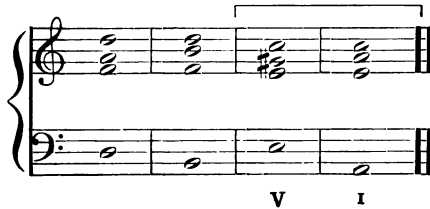


These anticipated tones are no more related to the first chord in which they appear, than are the suspended tones previously considered related to the harmony of the chord in which they are held over.

The last two chords in this cadence:



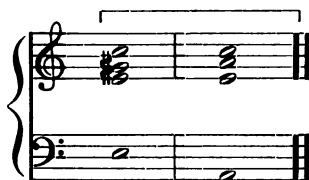
should be regarded as the triads on degrees V and I with *E* anticipated by the soprano; — not as a connection of the triads on degrees III and I. This is proved by the cadential significance of the succession V-I, a significance wholly foreign to the succession III-I. Similarly, in minor, the succession



is not III-I (with the 7th scale-degree raised in the triad on III), but unquestionably is the succession V-I (dominant chord and tonic), with C anticipated by the soprano. Also see next example:



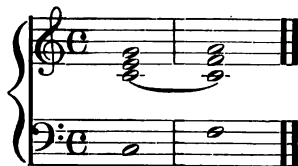
If this can be explained only as αV_7 , with anticipated Third out of I , it proves that



must be just the same thing (minus the Seventh), that is, αV with anticipated Third out of I .

3. ALTERED CHORDS

The Altered Chords, too, are nothing but ornamental variations of the fundamental chord-forms, triad and seventh-chord. The alteration is effected by a single part, which either approaches its chord-tone in the next chord chromatically, or directly transforms itself into the nearer chromatic tone (provided, in either case, that the chord-tone thus approached is the diatonic neighbor of the first tone). For example, instead of connecting the tonic triad with the triad on degree IV in this way



the connection may be made by letting G in the soprano approach its diatonic neighbor, A , chromatically:



or by transforming it directly into the nearer tone G#:



Where a single part introduces this species of chromatic ornament, which is essentially melodic, not harmonic, *no new chord-form is created.*

The very term "altered chord" may seem like a contradiction of the above definition; but such is not the case. "Altered chords" are simply chords, a single member of which has undergone a chromatic alteration. The "altered" chord remains a chord; but on that account we need not regard the altered tone as a chord-tone.?

Taking former exercises to experiment with, introduce altered tones in all cases where any part progresses by a whole-tone step (either up or down), by letting it approach its chord-tone in the second chord chromatically. For example:



For correct notation, observe this orthographic rule: *Raising by a semitone is the characteristic of upward progression; lowering by a semitone, the characteristic of downward progression. Consequently, in writing chromatic ornaments, it does not matter where the tone to be altered comes from, but which way it goes.*

In these experiments it will often happen, that the altered tone appears to belong to the chord within which it sounds as if it were a new chord-tone; for instance, in

The first row shows two examples separated by "etc. or".
 Example 1: Treble clef, two chords. The first chord has notes G4, B4, D5. The second chord has notes G4, B4, D5 with a flat on B4. Bass clef has notes G3, B2, D3.
 Example 2: Treble clef, two chords. The first chord has notes G4, B4, D5. The second chord has notes G4, B4, D5 with a flat on B4. Bass clef has notes G3, B2, D3 with a flat on B2.
 The second row shows two examples separated by "etc. or".
 Example 3: Treble clef, two chords. The first chord has notes G4, B4, D5. The second chord has notes G4, B4, D5 with a flat on B4. Bass clef has notes G3, B2, D3 with a flat on B2.
 Example 4: Treble clef, two chords. The first chord has notes G4, B4, D5. The second chord has notes G4, B4, D5 with a flat on B4. Bass clef has notes G3, B2, D3 with a flat on B2.

This appearance of harmonic membership is strengthened when the altered tone does not form an intermediate step between two chord-tones, but is *substituted* for the first chord-tone:

The first row shows three examples.
 Example 1: Treble clef, two chords. The first chord has notes G4, B4, D5. The second chord has notes G4, B4, D5 with a flat on B4. Bass clef has notes G3, B2, D3.
 Example 2: Treble clef, two chords. The first chord has notes G4, B4, D5. The second chord has notes G4, B4, D5 with a flat on B4. Bass clef has notes G3, B2, D3 with a flat on B2.
 Example 3: Treble clef, two chords. The first chord has notes G4, B4, D5. The second chord has notes G4, B4, D5 with a flat on B4. Bass clef has notes G3, B2, D3 with a flat on B2.
 The second row shows one example.
 Example 4: Treble clef, two chords. The first chord has notes G4, B4, D5. The second chord has notes G4, B4, D5 with a flat on B4. Bass clef has notes G3, B2, D3 with a flat on B2.

It is not always so easy as it may look from the above specially constructed examples, to discover by analysis whether, in such cases, we have to do with a real chord-form or with an accidental cluster of tones produced by altering a single tone.

For example, the substitution of minor subdominant harmonies for the major corresponding harmonies may be plausibly explained by saying, that in the major subdominant harmonies the descending Fifth (of triad and seventh-chord on degree II), or Third (in the triad on degree IV), has been chromatically lowered, so that the resemblance to the corresponding minor harmony is merely external and accidental (see p. 97).

IV V I II V I

II⁷ V I

Again, in C major,

this progression [taken by itself] may just as well be called a transition to *d* minor (with raised 7th degree), as a passage in C major (with C raised chromatically to approach *D*).

Most theorists consider every combination with chromatically altered tones, whenever it corresponds to familiar fundamental chord-forms, as a transition or modulation to another key. Rimsky-Korsakov excludes some few such accidental combinations from this

category, using the terms "false dominant seventh-chord" and "false diminished seventh-chord."



Decide each case on its own merits; and employ the term "relatively altered chords" for any combinations which, while similar in appearance to familiar chord-forms, are recognized from what precedes and follows them as having arisen through the alteration of one or more single tones; distinguishing them from those combinations which exhibit no such outward correspondence to familiar chord-forms.

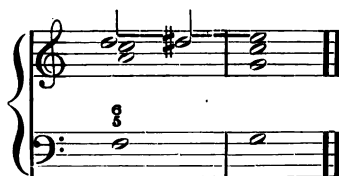
Thus, in a closing cadence in *C* major, these last two chord-progressions would be recognized unequivocally as seventh-chords on degree II, in which (1) a single tone, *F*, and (2) two tones, *F* and *D*, are made to approach chromatically their respective chord-tones *G* and *E*—and, hence, would be termed "relatively altered."

From the conception of the altered tones as melodic ornaments of a single part, as tones foreign to the chord*, all special names

* As a proof that the altered tone is no organic member of the chord within which it sounds, we may adduce the familiar phenomenon that the cross relation (see p. 108) with altered tones is always permissible and without ill effect. For instance, in a modulation from *G* major to *C* major the effect of the cross relation is bad; while it is good when *F* (in *C* major) is altered to *F*#.



and classifications of the accidental tone-combinations to which they give rise are superfluous. For example, in this progression,



the fact that by altering D to $D\sharp$, in passing to E , the Sixth $F-D$ becomes an augmented Sixth $F-D\sharp$, is merely a side-issue, and no reason for setting up and naming an "augmented chord of the Fifth and Sixth" as a special chord-form.

Wherever the 2d degree of the key, descending to the tonic, is made to approach this tonic chromatically (*i.e.*, is lowered chromatically), it may be called a *descending leading-tone*; for example:

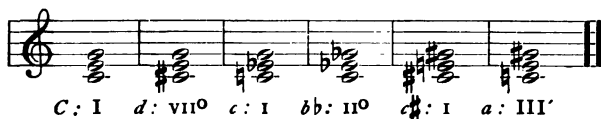


Notice particularly, when analyzing progressions, that chords like the following:

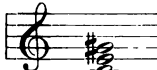


are to be considered neither as proper to the scale of *a* minor, nor (on that account) as relatively altered chords. In this case, by considering the 7th degree *not raised* as proper to the minor scale, a contradiction is explained which is usually passed over in silence.

Jadassohn, in his "Manual of Harmony" (New York; p. 118), says that this series of chords



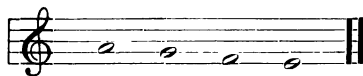
shows "chromatic alterations of the triad on the 1st degree in *C* major, which we have already met with as natural chords. We therefore do not regard them

as altered chords, with the exception of the last . This chord

appears, not only as the augmented triad on the 3d degree in *a* minor, but also in *C* major, as the triad on the first degree with altered fifth."

Now, *C-E-G#* is either an already familiar *fundamental chord* (in *a* minor, degree III) — and "therefore not to be regarded as an altered chord" — or it is an *altered chord*, in which latter case it does not occur in *a* minor with a Fifth proper to the scale. It is not explained why just this chord should be made an "exception" to the definition applied to all the rest, and to the rule derived therefrom.

True, Rimsky-Korsakov places side by side a "natural minor scale" (with 7th degree not raised) and an "artificial" one (with 7th degree raised; see his "Practical Manual of Harmony"); but recommends that only the latter should be employed in harmonization, "because it has the leading-tone, which is lacking in the natural minor scale." Nevertheless, he then very sensibly proceeds to treat of the fundamental triad on the third degree of the "natural" minor scale only, remarking: "It is employed (1) like the triad on degree III in major in harmonizing the descending upper tetrachord of the natural minor scale:



(2) It should follow the fundamental triad on the first or sixth degree, and leads into the subdominant triad."



And in the subsequent chapters he nowhere mentions a triad $C-E-G\sharp$ on the third degree in a minor.

The triad on the third degree in a minor is $C-E-G$ (see p. 21); when this G is to be led up to A , it may approach this A chromatically (i.e., be altered into $G\sharp$) just as properly as G in the triad on the first degree in C major. The same applies to the seventh-chord on degree III, $C-E-G-B$.

Exercise. Analyze the following example:

Solution. Measure 1. C major: (1) Triad on degree I.

(2) The same. The Fifth G (in tenor), chromatically approaching its chord-tone A , is altered to $G\sharp$.

Measure 2. Chord of the Fifth and Sixth on F ; an inversion of the seventh-chord on degree II with suspension of E before D (in soprano).

Measure 3. (1) Seventh-chord on degree II.

(2) Chord of the Third and Fourth on D ; an inversion of the seventh-chord on degree V. The Fifth D (in bass), chromatically approaching its chord-tone C , is altered to $D\flat$. This $D\flat$ might be also called a descending leading-tone.

Measure 4. (1) Triad on degree I.

(2) The same, as a sixth-chord.

Measure 5. Seventh-chord on degree II. The A in tenor, progressing down to G , is (relatively) altered to $A\flat$. At the same time, suspension of G before F (in soprano).

Measure 6. Triad on degree I, as sixth-chord. The Fifth G (in tenor) chromatically altered to $G\sharp$.

Measure 7. (1) Triad on degree II, as sixth-chord.

(2) Triad on degree vi; *C*, approaching *D*, is (relatively) altered to *C*♯. (Or, transition to *d* minor through its 5th degree, with *C*♯ as leading-tone.)

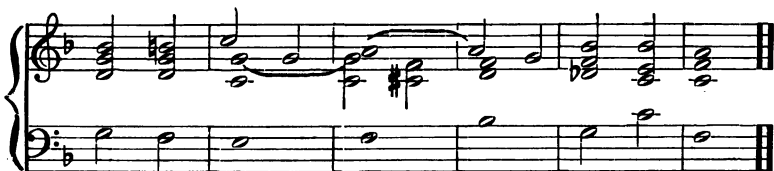
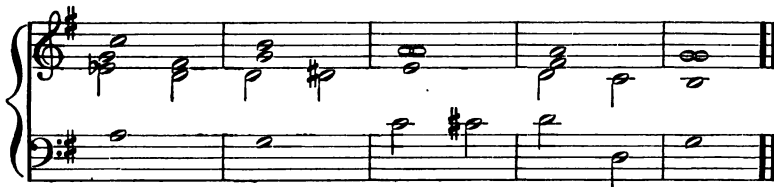
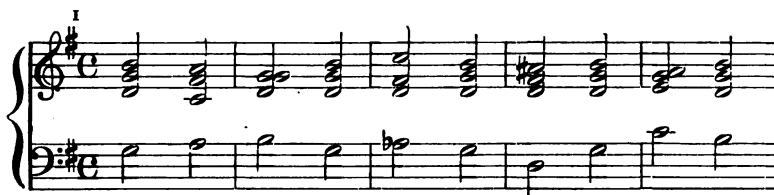
Measure 8. Triad on degree II (or degree I, in *d* minor). Triad on degree I, as sixth-chord.

Measure 9. (1) Seventh-chord on degree II (as a $\frac{6}{5}$ chord). The Fifth *A* is (relatively) altered to *A*♭.

(2) Seventh-chord on degree V.

Measure 10. Tonic triad.

Analyze the following examples in like manner.



3

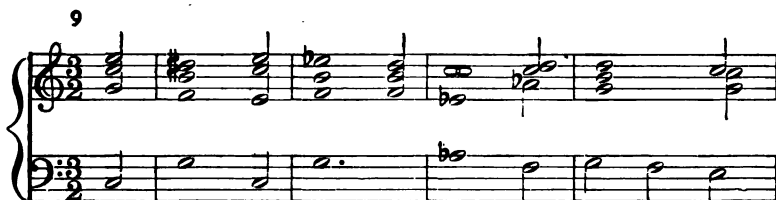
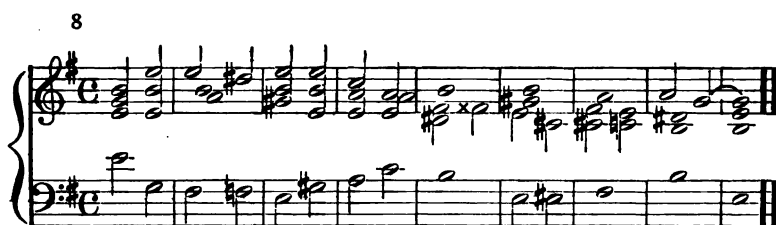
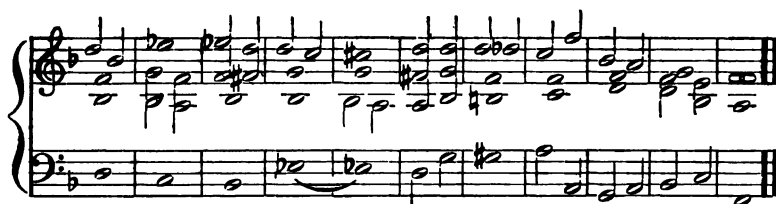
4

5

6



I e: II₇ V₇ I a: VII₇ I G: II





10



11



12







By altering a tone, a closer connection is effected between successive chords, because the altered tone is chromatically brought nearer to its following chord-tone. And frequently, by introducing an altered tone in the *second* chord, a new common tone is artificially created. For example,

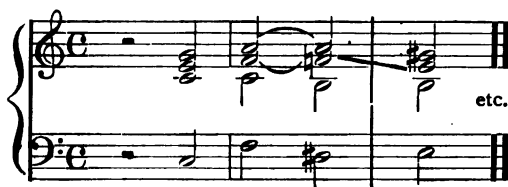


by the alteration of $C\sharp$, the Fifth of the dominant seventh-chord $F\sharp-A\sharp-C\sharp-E$ in B major, into C (in view of its downward progression to B), a new common tone with the preceding chord is created in the alto.

By reason of the closer chord-connection thus effected, it is natural to employ

ALTERED CHORDS AS A MEANS OF MODULATION

For example:



Exercise. (1) Introduce altered tones in exercises in modulation formerly worked out, so as to effect a closer connection between the successive chords.

(2) Examine the modulations given on pp. 98 *et seq.* to discover where it is possible (a) to consider any *dominant seventh-chord*, connected by the aid of a common tone, as an *altered chord*, and (b) to consider the *tonic triad* of the "old" key as an *altered chord* of the "new" key. For example:

(a)

C: 3 { VI₇ altered
D \flat : V₇ VI

Convince yourself that $A\flat-C-E\flat-G\flat$ is actually a possible altered chord-form on the 6th degree in C major —

$C: I \quad VI_7 \quad II_7 \quad V_7$

(b)

$C: \left\{ \begin{array}{l} I \\ Eb: II \text{ (with altered} \\ \text{descending} \\ \text{Third)} \end{array} \right\} V_7 \quad I$

Employ altered chords for modulation into remote keys. *E.g.*

$Db: I \left\{ \begin{array}{l} Gb: V_7 \\ Eb: V_7 \\ a: II \text{ (with altered} \\ \text{descending Root)} \end{array} \right\} V \quad I$

(3) Harmonize the following sopranos, employing suspensions and altered chords.

(1)

(2)

(3) 



(4) 



(5) 



(6) 



(7) 



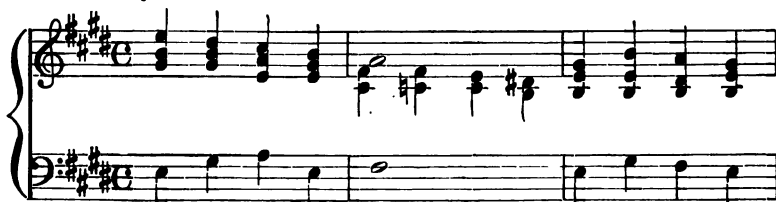
(8) 



(9) 



For example:





ENHARMONICS

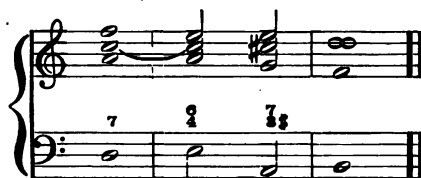
The principle of holding common tones in the same parts, for the connection of successive chords, amounts simply to this: That by changing the relation of a tone to its root, the tone acquires, and can be employed in, new harmonic significance.

For example, in



the Fifth *G* in the triad *C-E-G* becomes, when its root *C* progresses to *G*, itself the root of another triad, *G-B-D*.

This change of root-relation becomes of peculiar importance when a tendency-tone is involved. For instance, in the following:



the Seventh *C* becomes, when its root *D* progresses to *E*, the Third of the triad on *A* (as a $\frac{9}{4}$ chord), and so loses its character of a Seventh (see page 92) to assume another character.

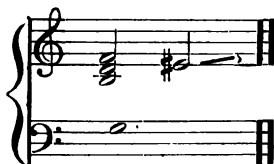
This change of character in a tone, by changing its root-relation, is nowhere more striking than when accompanied by a change of name, the so-called

ENHARMONIC CHANGE

A change in root-relation often necessitates a change of name; *vice versa*, a change of name will often bring about a change in the root-relation. Taking the chord $G-B-D-F$, if we lead D to $C\sharp$ we have the unintelligible combination $G-B-C\sharp-F$. But by changing F (enharmonically) into $E\sharp$, we obtain an easily recognizable $\frac{3}{2}$ chord on G , in which G is an altered tone descending from $G\sharp$ (a descending leading-tone); this being the second inversion of the dominant seventh-chord $C\sharp-E\sharp-G\sharp-B$ with chromatically lowered Fifth:



Conversely, the chord $G-B-D-F$ has a new harmonic significance when F is changed into $E\sharp$; the dominant seventh-chord $G-B-D-F$ is thus turned into a chord of the Fifth and Sixth on G with chromatically raised Sixth (E to $E\sharp$):



Innumerable opportunities for modulation are opened by the chord-changes made possible by the enharmonic change of name. It would be wholly unprofitable to enumerate them, even in abridged form. For their harmonic analysis the orthographic rule given on page 124 will suffice: "Raising by a semitone is the characteristic of upward progression; lowering by a semitone, the characteristic of downward progression."

Do not be led astray by the circumstance that classic, romantic, and modern composers, none of whom needed to regard orthographic reform as their special province, do not adhere to this rule of notation. For illustration, when Schubert writes, in "Ungeduld,"

Dein ist mein Herz.

he most certainly intends

? A: 1 $\frac{1}{2}$ A: 11 $\frac{7}{7}$ 1 $\frac{1}{2}$

When Brahms, in his "German Requiem," writes:

Se - lig sind!

he most certainly intends

D \flat : I ? F: 1 $\frac{1}{2}$ D \flat : I F: 11 $\frac{7}{7}$ 1 $\frac{1}{2}$
(Cf. page 126.)

Exercise. Experiment with enharmonic changes in exercises formerly worked out; and always indicate what the progression of each separate part will be after the enharmonic change is effected.

4. PASSING-NOTES AND CHANGING-NOTES

Passing-Notes

(Passing-tones) are tones foreign to the chords which they accompany, and passing stepwise from one chord to another. Their employment in chord-connection, like the employment of suspensions and altered tones, bears the character of a melodic and rhythmic ornamentation, and does not bring about new harmonic combinations.

Thus, in the following example,

the soprano progresses by means of diatonic passing-notes from *C* through *D* to *E*, and from *E* through *F* to *G*.

Here



the soprano progresses by a diatonic passing-note from *C* back to *C*.

Here



the soprano progresses by diatonic passing-notes from *C* through *B* and *A* to *G*.

Here



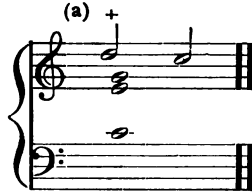
the soprano progresses by chromatic passing-notes from *C* through *C#*, *D* and *D#* to *E*.

For the correct notation of chromatic passing-notes, remember, that "raising by a semitone is the characteristic of upward progression, and lowering by a semitone the characteristic of downward progression."

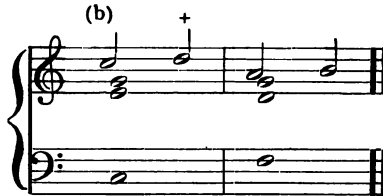
Changing-Notes

Changing-notes (changing-tones) are diatonic or chromatic neighboring tones of chord-tones, which one part (*a*) substitutes ornamentally for its chord-tone before sounding the latter, or (*b*) is led away from by a leap, and leaves unsupported by the second neighboring

tone (the so-called "Fux's changing-note"). The employment of changing-notes also results in no new harmonic combination, being nothing more than an ornamental change of some familiar fundamental chord-form. For example, here



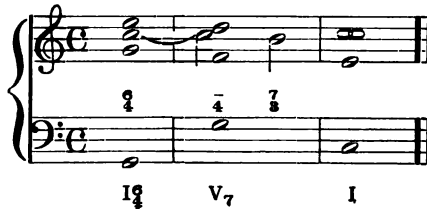
the soprano does not sound its chord-tone *C* until after its substitute, the changing-note *D* (diatonic neighbor of *C*). And here



the soprano leaps from the tone *D*, which is not a chord-tone, leaving it unsupported by a second neighboring tone (either *E* or *C*).

In the first instance (*a*) the changing-note makes the impression of an unprepared, freely entering suspension. A neighboring tone substituted for a chord-tone is called a suspension *only when prepared*; otherwise it is always a changing-note (see p. 110).

In the following, for example,



C is a suspension before *B*; but here,



C is a changing-note substituted for *B* (not an "unprepared suspension").

The figuring will be the same in both cases; only in the latter case the preparation (for the tone foreign to the chord) is omitted.

5. THE ORGAN-POINT

An organ-point (or pedal-point) is a sustained bass tone (tonic or dominant), above which the other parts progress independently. The organ-point usually occurs toward the close of a composition, and then the sustained bass might readily be conceived as an anticipated closing tone (tonic) or an anticipated preparatory closing tone (dominant). What the other parts have to say above this anticipated close, is generally in the shape of a brief review of the content of the entire piece, or a reminiscence of its essential thematic material.

No harmonic relation subsists between the sustained bass and the higher parts. Consequently, we should not figure the accidental intervals made by the higher parts with the sustained bass tone, but consider the next-lowest tone as the bass, and figure from that.

The organ-point always begins on the strong beat.



First system of musical notation. Treble clef, key signature of one sharp (F#). The exercise consists of four measures. The right hand plays a descending eighth-note scale: G4, F#4, E4, D4, C4, B3, A3, G3. The left hand plays a series of chords: G3, F#3, E3, D3, C3, B2, A2, G2. The notes are numbered 6, 7, 4, 7, 6, 5, 4, 4 (8) (2) 6.

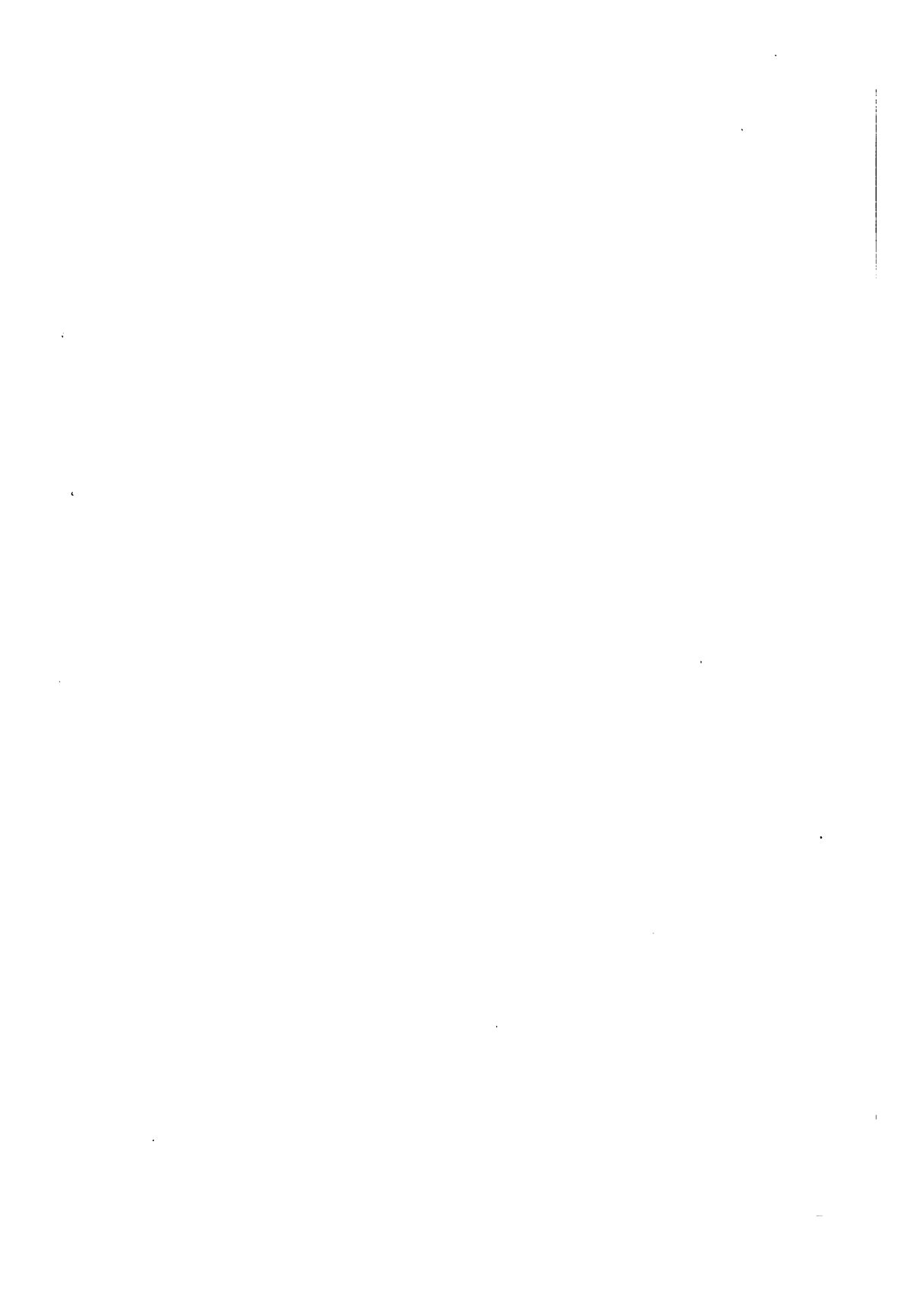
Exercises.

Second system of musical notation. Treble clef, key signature of no sharps or flats. The exercise consists of four measures. The right hand plays a descending eighth-note scale: C4, B3, A3, G3, F3, E3, D3, C3. The left hand plays a series of chords: C3, B2, A2, G2, F2, E2, D2, C2. The notes are numbered (3) 4 6 7 6 5 4 3 2 1.

Third system of musical notation. Treble clef, key signature of two sharps (F# and C#). The exercise consists of four measures. The right hand plays a descending eighth-note scale: D4, C#4, B3, A3, G3, F#3, E3, D3. The left hand plays a series of chords: D3, C#3, B2, A2, G2, F#2, E2, D2. The notes are numbered 7 4 6 6b 4# 6 7 4 6 7 5 4 6.

Fourth system of musical notation. Treble clef, key signature of three sharps (F#, C#, and G#). The exercise consists of four measures. The right hand plays a descending eighth-note scale: E4, D#4, C#4, B3, A3, G#3, F#3, E3. The left hand plays a series of chords: E3, D#3, C#3, B2, A2, G#2, F#2, E2. The notes are numbered (8) 5 2 6 6 6 4 5 6 8# 6 7.

Fifth system of musical notation. Treble clef, key signature of three sharps (F#, C#, and G#). The exercise consists of four measures. The right hand plays a descending eighth-note scale: F#4, E4, D#4, C#4, B3, A3, G#3, F#3. The left hand plays a series of chords: F#3, E3, D#3, C#3, B2, A2, G#2, F#2. The notes are numbered 6 6 7 6 6 7 7 4 7 6 5 4 7 6 6 (2) 6.



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